

INDEX, 1913

VOLUME LXXXVII

A

Accidents on electric railways.....	130†
Accumulators, Hydro-pneumatic, Watson-Stillman Co.48*	1421*
Acetylene mantle lamp.....	1468
Acme Machine Tool Co., Turret lathe.....	677*
Acme Supply Co., Car window.....	1499*
Acme Supply Co., Diaphragm.....	1530*
Acme Supply Co., Diaphragm attachment.....	1503*
Advertising pages, appearance of, in <i>American Engineer</i>	62‡
Aeroplane flight, Record for.....	366‡
African railways, Gage of.....	141‡
Air brake apparatus, Grinding piston rings..	132*
Air Brake Association (see also Meetings).	

Air Brake Association Convention.

(Reports and Discussions.)

Air hose failures.....	329
Freight trains, Operating long.....	286*
Quick action, Undesired, its prevention and remedy.....	317
Secretary's report.....	286
Steam heat traps, Location of.....	328
Triple valves, Will they operate as intended?.....	319*
Air brake, Care and maintenance of, by Ralph Wolfe.....	265
Air brake, Electro-pneumatic.....	95
Air brake hose.....58‡, 579‡	1506‡
Air brake hose, by J. S. Sheafe.....	618*
Air brake hose coupling, Sheafe.....	332*
Air brake hose failures, by T. W. Dow.....	329
Air brake hose label.....	618*
Air brake hose specification, M. C. B.....	1509*
Air brake safety attachment, Sauvage.....	1423*
Air brake, triple valve, Tool for repairing..	625*
Air brake, United States.....	508*
Air brake valve, Sauvage.....	1468*
Air brake, Variable load, Bettendorf.....	1465*
Air brake work, Small face plate for.....	253*
Air brakes, Operation of triple valves.....	319*
Air brakes, Testing slide valve feed valves in roundhouse.....	545*
Air brakes, Undesired quick action of.....	317
Air clamp for drill press, M. K. & T.....	81*
Air compressor, Gasolene driven.....	1467*
Air hammer for boiler shops, Frisco.....	191*
Air hammer, "Little David".....	332*
Air hose coupling.....	332*
Air intake for car window, Garland.....	564*
Air motors, Angle attachment for, B. & O..	22*
Air pump, Compound, locomotive.....	104*
Air pump, Oiling the air cylinders of.....	1368*
Air pump steam head repairs.....	605*
Air pump testing stands, Frisco.....	375*
Air pump valves, Protecting in shipment, C. & N. W.....	132*
Air sander for interurban cars.....	482*
Alaska, Railway in.....	390†
Alcohol heater car, Tests of.....	441*
Alcohol Heating & Lighting Company, Tests of car.....	441*
Alden, C. L., Freight car troubles.....	266
Allen, G. G., Rolling mills at scrap docks..	305
Alloys, Melting point of commercial copper	640†
Altitude record.....	84†
American Car & Foundry Co., Annual report.....	461
American Car & Foundry Co., Car, box, P. & R.....	211*
American Car & Foundry Co., Car, express refrigerator.....	149*
American Car & Foundry Co., Car, postal, C. M. & St. P.....	1410*
American Car & Foundry Co., Car, postal, Wabash, 60-foot steel.....	609*
American Car & Foundry Co., Car, refrigerator, Union Pacific.....	263*
American Car & Foundry Co., Car, steel frame box, Frisco.....	555*
American Car & Foundry Co., Folding lavatory.....	1523*

American Electric Railway Association convention announcement.....	571
<i>American Engineer</i> , Change in name.....	283‡
American Flexible Bolt Co., Flexible bolt..	1299*

American Locomotive Company,

Annual report.....	514
Associated Lines standard locomotive..	6*
Large narrow gage locomotive.....	20*
Throttle rigging, Improved.....	331*
Locomotive, 0-6-0 type, Ill. Cent.....	362*
Locomotive, 2-8-0 type, W. & L. E.....	641*
Locomotive, 2-8-2 type, Grand Trunk.....	1359*
Locomotive, 2-8-2 type, Lake Shore.....	231*
Locomotive, 4-6-2 type, D. L. & W.....	1390*
Locomotive, 4-6-2 type, Erie.....	1392*
Locomotive, 4-8-2 type, Mo. Pac.....	583*
American Mason Safety Tread Co., car step	1499*
American Museum of Safety meeting.....	680
American Piston Company, Graphometal packing.....	160*
American Railway Master Mechanics' Association (see Master Mechanics' Association).	
American Railway Tool Foremen's Association (see Tool Foremen's Association).	
American Steel Foundries, Car truck experiments.....	42*
American Society of Mechanical Engineers, (see also Meetings).	

American Society of Mechanical Engineers.

(Papers and discussions.)

Car, Box, Steel frame, by R. W. Burnett.....	651*
Car, Box, Steel underframe, by G. W. Rink.....	657*
Car, Passenger, Design of steel.....	228‡, 257*, 657
Locomotive, Selection of.....	3‡
Locomotive, Selection of. Discussion by F. F. Gaines.....	12
Locomotive, Selection of. Discussion by A. W. Gibbs.....	12
Locomotive, Selection of. Discussion by G. R. Henderson.....	13
Locomotive, Selection of. Discussion by S. Hoffman.....	13
Locomotive, Selection of. Discussion by W. F. Kiesel.....	11
Locomotive, Selection of. Discussion by H. H. Vaughan.....	11
Locomotive, Selection of. Discussion by C. D. Young.....	15*
American Tool Works Co., Geared head lathe.....	1398*
American Tool Works Co., Improved radial drill.....	1264*
American Vanadium Co., Service of rods and tires.....	648
American Vanadium Co., Test of driving wheel tires.....	15*
Ames, John McE., Underframe, steel passenger car, A. S. M. E.....	261
Anderson, H. A., Inactive and obsolete stock	298
Angle cock, Improved, Kendrick.....	1265*
Appliances, defective on railway rolling stock.....	244†
Appointments in the mechanical department	111‡
Apprentice instruction on Santa Fe.....	311*
Apprentice schools on the Erie.....	80*
Apprentices, number on Ill. Cent. and Cent. of Ga.....	249*
Apprentices, training.....	348‡
Apprenticeship, cost of, Ill. Cent. and Cent. of Ga.....	249*
Apprenticeship, description of system on Ill. Cent.....	249*
Apprenticeship, moving pictures in.....	174‡

Apprenticeship on the Ill. Cent.....	249*
Apprenticeship paper at General Foremen's convention.....	417
Apprenticeship training, Address by G. M. Tasford.....	351
Arbor, Expansion, Boston & Maine.....	595*
Arch bars, Mirror for inspecting.....	96*
Arch tube cleaner.....	1300*
Arch tubes, Tools for inserting.....	28*
Argentina, New railway mileage in.....	30†
Argentina, Railway difficulties in.....	404†
Argentine, Innovations on passenger cars in	640†
Arm rest, Hinged, for cab.....	241*
Arnold, B. H., Motor cars.....	324*
Ashmore, C. D., Repairs to main rods.....	29*
Ashton Valve Company, Wheel press recording gage.....	447*
Asia Minor, Railway construction in.....	144†
Associated Lines, Standard locomotives.....	5*
Atlantic City conventions, List of exhibitors and representatives.....	1267
Atlantic Coast Line, Boiler tube rack.....	606*
Atlantic type locomotives, Possibilities of, Discussion by W. F. Kiesel, Jr.....	11
Attachment for countersinking on drill press, B. & O.....	22*
Australia, Change of gage in.....	344†
Australia, Railway extension in.....	402†
Autogenous welding in locomotive fireboxes.	670*
Automatic connector, Durbin.....	454*
Automobile car, Steel frame, P. R. R.....	1492*
Aviation record.....71†, 212†	316†
Axle design for gondola car.....	381*
Axle lathe output, Increasing, by C. L. Dickert.....	34*
Axle lighting system, Santa Fe.....	392*
Axles, Heat treated steel.....	366*
Axles, Interchangeable wide and narrow gage.....	30†
Ayers pipe clamp.....	234*

B

Babbitt on car journal brasses, C. & N. W.....	267*
Babcock, F. H., Portable rivet forge, P. & L. E.....	33*
Babcock safety water gage.....	333*
Barcalo Mfg. Co., Wrench.....	1467
Barney & Smith Car Co., End construction for steel cars.....	87
Barney & Smith Car Co., N. Y. C. coach..	89*
Barnum, M. K., goes to Baltimore & Ohio.	1371‡
Basford, G. M., You have received, what will you give?.....	351
Basis for comparing machine tools, L. R. Pomeroy.....	114‡
Bates, Henry A., Non-vibrating chair.....	568*
Battery, Lead storage in Europe.....	524†
Baush Machine Tool Co., Radial drill.....	511*
Baxter charcoal car heaters.....	451*

Baldwin Locomotive Works.

East Chicago plant.....	345
Hodges trailer truck.....	74*
Locomotive, Associated Lines, standard	6*
Locomotive, 2-8-2 type, Ill. Cent.....	362*
Locomotive, 2-8-2 type, Lehigh Valley.....	1408*
Locomotive, 4-6-2 type, New Haven.....	1293*
Locomotive, 4-6-2 type, Santa Fe.....	525*
Locomotive, 2-8-2 type, Santa Fe.....	525*
Ball bearings on axle lighting generators	453*, 1466*
Ball joints, Machine for turning.....	603*
Ballast cars, Repairing.....	608
Baltic type locomotive.....	190*
Baltimore & Ohio, Cumberland terminal....	591*
Baltimore & Ohio, Driving box kinks.....	75*
Baltimore & Ohio engine house for Mallets.	577‡
Baltimore & Ohio locomotive shop kinks.....	21*
Baltimore & Ohio postal car lighting tests.	212*
Barber four-point car truck.....	1502*
Baxter charcoal car heaters.....	451*
Belgium, Railway ties in.....	574†

Baldwin Locomotive Works—(cont.)

Belt record, W. & L. E.	370*
Belts, Slipping of.	296†
Bender for flat rods, G. N.	136*
Bender for round rods, G. N.	136*
Bending machine, Air.	254*
Bentley, F. W., Jr., Face plate for air brake work	253*
Bentley, F. W., Jr., Protecting air pump valves in shipment, C. & N. W.	132*
Bentley, F. W., Jr., Spool for packing.	596*
Bentley, F. W., Jr., Testing slide valve feed valves in roundhouse.	545*
Bentley, F. W., Jr., Wrench for removing lubricator plugs, C. & N. W.	371*
Bentley, H. T., Address at Fuel convention	289
Besly, C. H. Co., Double spindle grinder.	628*
Bettendorf Co., High capacity truck.	1503*
Bettendorf Co., Refrigerator cars, Union Pacific	263*
Bettendorf Co., Variable load brake.	1465*
Beyer, O. S., Jr., Factors in locomotive selection	9
Beyer, O. S., Jr., Railway specifications.	50
Billingham, R. A., Waste retainer for journal boxes	510*
Birmingham Southern, 70 ton hopper car.	503*
Blackburn, H. E., Apprentice schools on the Erie	86*
Blackburn, H. E., Preparing hard grease.	662*
Blacksmiths' Association (see Master Blacksmiths' Association).	
Blacksmith shop, Forging dies.	77*
Blacksmith shop kinks, C. L. Dickert.	253*
Blacksmith shop, Use of bulldozers.	77*
Blow torch, Universal.	453*
Boiler check, Osman.	456*
Boiler circulation, Apparatus for testing.	65*
Boiler design, Locomotive, Discussion by F. F. Gaines, A. S. M. E.	12
Boiler ejector for coal sprinkling.	334*
Boiler inspection law, Comments at Boiler Makers' Convention	1277‡
Boiler inspector, Federal, Report of.	32
Boilermakers' Association (see also Meetings).	

Boilermakers' Convention.*(Reports and Discussions.)*

Address of J. F. De Voy.	316
Address of J. F. Ensign.	314
Address of Frank McNamany.	315
Address of W. L. Park.	314
Address of Robt. Quayle.	315
Address of C. A. Seley.	314
Effect of superheaters on life of firebox and flues	315
Election of officers.	316
Feed water treating, Benefits derived from	316
Grates, Best form of.	316
Superheater tube welding.	315
Tubes, Limit of length of.	314
Weak and unsafe condition of boilers.	314
Welding, Oxy-acetylene and electric.	315
Boiler scale, Device for preventing.	17*
Boiler shells, Drilling holes in, M. K. & T.	84*
Boiler shop kinks, N. C. & St. L.	142*
Boiler shops, Air hammer for.	191*
Boiler studs and plugs, Form of thread and degree of taper.	435
Boiler tests, Jacobs-Shupert.	59‡
Boiler tests, Low water.	66*
Boiler tube rack, A. C. L.	606*
Boiler tube tools, by Walter R. Hedeman.	23*
Boiler tubes, Limit of length without midway support	314
Boiler tubes, Welding superheater.	315
Boilers, Armored squirt hose.	334*
Boilers, Explosion, Jacobs-Shupert tests.	66*
Boilers in New Zealand.	536†
Boilers, Scrapping with oxy-acetylene torch.	602*
Boilers, Safety water glass.	333*
Boilers, Tests of Jacobs-Shupert.	63*
Boilers, Weak and unsafe condition.	314
Bolster, Truck, Designing a.	381*
Bolt, The Kling.	158*
Bolts, Variation in size.	636‡

Books.

Air Brake Association, Proceedings 1913	638
Blacksmiths' Association, Proceedings, 1912	60
Book of Standards, National Tube Co.	230
Calculus, An Elementary Treatise on, by W. S. Franklin, et al.	408
Car Builders' Dictionary.	61
Cement Specifications, A Treatise on, by Jerome Cochran.	60
Coal, by B. E. E. Somermeier.	60
Dewey Decimal System of Classification, An Extension of, by L. P. Breckenridge and G. A. Goodenough.	60
Diary of a Roundhouse Foreman, by T. S. Reilly.	114
Diesel Engines for Land and Marine Work, by A. F. Chalkley.	408
Economics of Railroad Construction, by W. L. Webb.	114
Electric Motors, Investigation of Explosion Proof	4

Books—(continued)

Electron Theory of Magnetism, by E. H. Williams	114
Engineering as a Profession, by Fleming and Bailey	466
Engineering Education, Society Proceedings	521
Engineer's Handbook on Patents, by William Macomber	465
Entropy-Temperature and Transmission Diagrams for Air, by C. R. Richards	408
Factory Lighting, by Clewell.	522
Handbook of Railroad Expenses, by J. S. Eaton	115
Heating and Ventilation, The Elements of, by A. M. Greene, Jr.	60
Holmes Hinkley, An Industrial Pioneer Hygiene for the Workers, by William G. Tolman	4
International Railway Fuel Association, Proceedings, 1913	521
Investigation of Explosion Proof Motors, Bureau of Mines.	4
Laying Out for Boilermakers, Second edition	466
Lighting of Passenger Cars, by Dr. Max Büttner	61
Linseed Oil and Turpentine, Density and Thermal Expansion of, by H. W. Bearce	60
Locomotive Boiler Construction, by Kleinmans	522
Locomotive Dictionary	60
Locomotive Operating, Practical, by Clarence Roberts	172
Machine Design, by W. D. Hess.	114
Master Blacksmiths' Association, Proceedings 1913	638
Master Boilermakers' Association, Proceedings, 1913	521
Master Car and Locomotive Painters' Association Proceedings, 1912.	4
Master Car Builders' Association, Proceedings, 1912	114
Passenger Cars Lighting of, by Dr. Max Büttner	61
Railway General Foremen's Association, Proceedings 1913	637
Rules of Management, by William Lodge	522
Resuscitation, by Chas. A. Laufer.	349
Safety First, by George Bradshaw.	579
Safety Valve Rating, by A. G. Carhart.	285
Science of Burning Liquid Fuel, by W. N. Best	579
Series Transformers, Characteristics and Limitations of	172
Shop Notes, by H. H. Winsor.	60
Smoke and Smoke Prevention, Bibliography	521
Strength of Materials, Merriman.	637
Traveling Engineers' Association, Proceedings, 1912	115
Traveling Engineers' Association, Proceedings 1913	638
Tool Foremen's Association, Proceedings 1913	637
Water, Its Purification and Use, by Christy	522
Worm Gearing, by H. K. Thomas.	172
Borer, F. J., Defective applications of brake apparatus	496
Boring head, Offset.	335*
Boring machines (see Machine tools).	
Boring mills, basis for measuring capacity, L. R. Pomeroy.	133*
Boring tool, Expansion, Davis.	1469*
Boston & Albany, Application of safety appliances to cars.	147*
Boston & Maine, Eccentric blade bender.	306*
Boston & Maine, Machine shop kinks.	595*
Boston & Maine, Turning wrist pins.	192*
Bowser, S. F., & Co., Tank for waste soaking	1500*
Box car, hopper bottom, Grand Trunk.	323*
Box car, Steel end for, N. Y. C.	40*
Box car (see also Car, Box).	
Box cars, Defective.	62‡
Boy, D. C., Moving pictures in educational work	174‡
Boyer pneumatic saw.	509*
Boyer speed recorder, Testing machine for, Erie	661*
Brake apparatus, Defective applications of.	496
Brake beam, Creco.	1526*
Brake beam hangers, Manufacture of.	368*
Brake beams, Repairing.	191*
Brake beams, standard recommended.	1505‡
Brake, Electro-pneumatic	95
Brake, Friction on boring mill, C. & N. W.	138*
Brake head, Adjustable.	1265*
Brake pipe, Effect of size on triple valve.	319*
Brake shoes and brake equipment, M. C. B.	1437
Brake staffs, Upsetting, Cent. of Ga.	538*
Brakes, Undesired quick action of.	317
Brass, Pouring crown and hub liner in driving boxes	200*
Brazil, New line for.	165‡
Brazilian Railway	345‡
Breckenfeld, J. C., Air hammer for boiler shops	191*

Books—(continued)

Breckenfeld, J. C., Chuck for staybolt drilling	247*
Breckenfeld, J. C., Shop kinks, Frisco.	373*
Brick arch, Advantages of, Paper at T. E. A. convention	473
Brick arch and smoke.	628†
Bridge, Proposed New York-New Jersey.	220†
Bronson, C. E., Design of counterbalance weights	529*
Brotan boiler, Service of.	124*
Buell, D. C., College men and the railroads.	580‡
Buell, D. C., Locating defective wheels.	152*
Buell, D. C., Moving pictures in educational work	67
Buffalo Brake Beam Co., Adjustable brake head	1265*
Building column, Reinforcing for jib crane.	370*
Bulleid, O. V. P., Chart for forging machine work	30*
Bulldozer, Pneumatic	309*
Bulldozers in railway shops, by L. D. Freeman	77*
Bundy, C. L., Freight car design.	268
Burglar-proof devices	1470†
Burma railways	562†
Burnett, R. W., Steel frame box cars, A. S. M. E.	651*
Burnside, Ill., Shop improvements.	193*
Butt, F. W., Electrical equipment on motor cars, A. S. M. E.	260
Butte, Anaconda & Pacific, Locomotive 2400 v., D. C., electric.	1357*

C

C. & C. Electric & Mfg. Co., Electric arc welding	391*
Cab deck, Shield for.	122*
Cab furnishings	241*
Cab vestibule, Can. Pac.	112‡, 117*
Caboose laws	87
Cain, D. B., Standard supply car.	302*
California, Elevated railway for.	397†
Camel Co., Box car door.	1500
Campbell, H. A. F., Locomotive connecting rods	175*
Campbell, N. A., Electro-pneumatic brake.	95
Canadian canals, Traffic through.	380†
Canadian Locomotive Co., Power reverse gear	627*
Canadian Pacific Railway, Box car for grain and coal traffic.	386*
Canadian Pacific Railway Cars, Steel frame box	651*
Canadian Pacific Railway, Laminated Drawbar	288*
Canadian Pacific Railway, Laying off shoes and wedges	307*
Canadian Pacific Railway locomotive, 4-6-2 type	117*
Canadian Pacific Railway, Tender without underframe	120*
Canadian Pacific Railway, Tests of alcohol heater car	441*
Canadian Pacific Railway, Vesteduled cab.	120*
Canadian Railway Club (see Meetings).	
Canals, New York.	438†
Canavan, W. F., Shop kinks, M. K. & T.	81*
Canton Foundry & Machine Co., Portable floor crane	568*

Car.

Application of safety appliances.	147*
Articles in competition.	28, 57‡, 111‡, 170‡
Automobile, Steel frame, P. R. R.	1492*
Baggage for scenery, C. R. R. of N. J.	615*
Ballast, Repairs	608
Bolster, Double body, by C. T. Westlake, A. S. M. E.	260
Brake, Variable load, Bettendorf.	1465*
Box for grain and coal traffic, Can. Pac.	386*
Box, Hopper bottom, Grand Trunk.	323*
Box made into stock cars, C. B. & Q.	379
Box, Steel end, New York Central.	40*
Box, Steel frame, Frisco.	555*
Box, Steel frame, Grand Trunk.	323*
Box, Steel underframe, A. S. M. E.	651*
Box, Steel underframe, P. & R.	211*
Box with hopper bottom, Can. Pac.	386*
Center sills, Tables for designing.	444*
Cleaning on the Pennsylvania.	98†
Construction	348‡
Construction as viewed by repair men.	255
Construction, Faulty	1506‡
Construction of freight, Improved methods of	437*
Construction, Standing committee on.	1506‡
Coupler, Lion freight.	1504*
Coupler, Penn. freight.	1422*
Coupler release rigging.	678*
Coupler, Stark	101*
Couplers and parts, Marking.	318
Damage by improper loading.	649*
Department notes, by Keyser.	203
Design of freight, by C. L. Bundy.	268
Design, Steel passenger problems, W. F. Kiesel, Jr., A. S. M. E.	257
Design, Steel passenger roof structure, C. A. Seley, A. S. M. E.	258
Design from repairman's standpoint.	143

Car—(continued)

Designing freight, by E. G. Chenoweth.	505
Diaphragm, Acme	1530*
Diaphragm attachment, Acme	1503*
Door, Rumsey freight	216*
Door, Rumsey mail	509*
Doors, Camel	1500*
Doors, Frisco steel frame box car	559*
Draft gear for 90-ton gondola	35*
Draft gear, lever type	1529*
Draft sills, Jersey Central gondola	207*
End, Cast steel, Wabash postal	610*
End for passenger, Barney & Smith	87
End frames, cast steel, C. R. R. of N. J.	615*
End, New Pullman	504*
End sill, Cast steel, C. R. R. of N. J.	207*
Ends, Pressed steel	1499
Flat, Erie, Special 75-ton	388*
Flat, P. & R., Four-point bearing	1502*
Freight, Design of	1505*
Freight, Improved details	437*
Freight, Large capacity	28
Freight, Repair costs	635*
Freight standard	115*
Freight troubles, by C. L. Alden	266
Freight troubles, by J. C. Frits	551*
Gasolene for Holton Interurban	270*
Gondola, Method of designing steel, by L. W. Wallace	381*
Gondola, 50-ton low side, C. R. R. of N. J.	207*
Gondola, 90-ton, N. & W.	35*
Hand holds, Device for securing	103*
Heaters, Baxter charcoal	451*
Heating control, Thermostatic	1522
Hopper, 70-ton, Birmingham Southern	503*
Hopper, 50-ton, C. R. R. of N. J.	439*
Illumination of postal cars	212*
Inspection of grain, by R. W. Schulze	33*
Inspectors, Developing efficient, C. & N. W.	380*
Instruction for train lighting, Pennsylvania	655*
Insulation, Steel passenger, N. Y. C.	89*
Interchange rules, Instruction	154
Interior finish, by Felix Koch, A. S. M. E.	259
Journal box waste retainer	510*
Journal brasses, Babbitting, by E. H. Morey	267*
Journal jack, Duff	45*
Journal jack, Reliance Junior	1266*
Ladder, Safety	220*, 1469*
Lighting, Axle generator suspension	456*
Lighting, Axle system, Santa Fe	392*
Lighting, Electric, by H. A. Currie, A. S. M. E.	259
Lighting, Electric fixtures for vestibules	1420*
Lighting, Fixture combined with electric fan	1420*
Lighting, Indirect on New Haven	395*
Lighting set, Terry	676*
Lighting, Specifications for postal	97
Lighting tests	607
Low capacity in interchange	1472*
Men and interchange rules	112*
Mine rescue	263
Motor, Electrical equipment, by F. W. Butt, A. S. M. E.	260
Motor, Gas-electric, P. & L. E.	143*
Motor, Gasolene, Holton Interurban	270*
Motor, Paper by Dodd and Arnold	324*
Motor, Sleeping for Australia	98†
Number ordered in 1912	38
Painting steel passenger, C. D. Young, A. S. M. E.	259
Passenger, Collapsible end construction	87*
Passenger maintenance, Paper at Painters' Convention	545
Passenger, New York Central Lines, steel	89*
Passenger, Painting of steel, by C. D. Young	245*
Postal, C. M. & St. P., Steel	1410*
Postal lighting fixtures, Safety car, H. & L. Co.	218*
Postal, Test of illumination	212*
Postal, Wabash, 60-foot steel	609*
Refrigerator, Express, Wells, Fargo & Co.	149*
Refrigerator, Pre-cooling for fruit	620*
Refrigerator proportions and insulation	613
Refrigerator, Tests of heater	441*
Refrigerator, Union Pacific	263*
Repair plant, Ill. Cent., Centralia	359*
Repair sheds, Ill. Cent.	360*
Repair track notes	656
Repairing arrangements and facilities, I. S. Downing	144
Repairs, Analysis of failures	205
Repairs, Cost of freight, by F. F. Gaines	205
Roof, Flexible arched metallic, Franklin	1468*
Roof framing, N. Y. C., Steel passenger	93*
Roof, Frisco box car	556*
Roof, Leaky	1426*
Roof, Outside metal, Pries	101*
Seats, Steel	1467
Self-propelled, by Dodd and Arnold	324*

Car—(continued)

Sheathing, Selection and treatment of	652
Shop arrangements and facilities, I. S. Downing	144
Side bearings, Anti-friction, Woods	158*
Side framing, N. Y. C., Steel passenger	94*
Sill steps, Forming dies for	78*
Sleeping on wrecking trains	146*
Stake pocket, Collapsible	678*
Standard box	636*
Standard, Development of box	654*
Steam heat trap location	528
Steel frame box, History of	651*
Steel freight, Life of	1472*
Steel in the tropics	561†
Steel passenger	637*
Steel passenger air brakes, A. L. Humphrey, A. S. M. E.	260
Steel passenger, Are they needed?	656
Steel passenger design, A. S. M. E.	257
Steel passenger, Development of	650
Steel passenger finishing, paper at Painters' Convention	539
Steel passenger in a wreck	501*
Steel passenger special ends, H. M. Estabrook, A. S. M. E.	262
Steel suspension, E. W. Sammers, A. S. M. E.	259
Step extension, Crofut	1504
Sock, Safety, Amer. Mason	1499*
Sock, Making from scrapped box cars, C. B. & O.	379
Subway, Proposed for New York	618
Supply, by D. D. Cain	302*
Tank, Design of, H. E. Parsons	445*
Truck, Link side bearing	673*
Testing plant	18
Truck, Arch bar	1505*
Truck bolster design	381*
Truck equalizer design, by L. V. Curran	96*
Truck equalizer design, by Sigurd Holm	350*
Truck experiments	42*
Truck, Four-point bearing, Barber	1502*
Truck, High capacity, Bettendorf	1503*
Truck, Location of side bearings	1471*
Truck locking device, Grand Trunk	104*
Trunk, Punching spring planks, Cent. of Ga.	131*
Truck side frame design	383*
Truck, Six wheel for gondola car, N. & W.	38*
Truck, Six-wheel, J. A. Pilcher, A. S. M. E.	259
Trucks, Comparison of rigid and loose	43*
Trucks, Mirror for inspecting, L. & N.	96*
Underframe, Dies for forming diaphragms	79*
Underframe, Frisco box car	557*
Underframe, Steel, G. W. Rink, A. S. M. E.	657*
Underframe, Steel, N. Y. C. passenger	90*
Underframe, Steel, Wabash postal	611*
Underframes, Steel, John McE. Ames, A. S. M. E.	261
Vestibule, Collapsible, Barney & Smith	87*
Vestibule curtain shield	1524*
Wheel failures	329
Wheel flanges and treads, by A. Stucki	523†
Wheel flanges and treads, by L. W. Wallace	497*, 523†
Wheels, Cast iron 70-ton car	1369*
Wheels, Chrome-Vanadium steel	181
Wheels, Locating defective, D. C. Buell	152*
Wheels, Nickelized	1529
Wheels, Removing flat spots from	204*
Wheels, Unloading	390*
Window air intake, Garland	564*
Window, Weather-proof, Acme	1499*
Wrecking equipment	145*
Car Foremen's Association of Chicago (see Meetings)	
Car Inspectors' and Car Foremen's Association report of annual convention	380, 495
Carline, Pressed steel, Cleveland	511*
Carry irons, Dies for bending	191*
Cars (see also Master Car Builders' Association Convention)	
Carty, F. J., Safety appliance application to cars	147*
Caruthers, C. H., Handling sand on locomotives	172†
Case hardening, Paper at Blacksmith's Convention	491*
Casey-Cavin, Power reverse gear	627*
Casino Technical Night School, Address by G. M. Basford	351
Cast steel in blacksmith shop, paper at Blacksmiths' Convention	492
Casting platforms, paper at Storekeepers' Convention	313
Catalogs, 56, 110, 168, 281, 346, 403, 404, 461, 462, 518, 576, 634, 684	
Cement in Russia	219†
Center plate, Truck centering	1524*
Center sills, Tables for designing	444*
Central Electric Co., Lighting fixtures on New Haven	395*
Central Engineering Co., Air hose coupling	332*
Central of Georgia, Apprenticeship on	249*
Central of Georgia, Increasing axle lathe output	34*
Central of Georgia, Machine shop kinks	75*

Central of Georgia, Planing taper flanges	414*
Central of Georgia, Punching spring planks	131*
Central of Georgia, Smith shop kinks	253*
Central of Georgia, Shop kinks	537*
Central Railroad of New Jersey car, Fifty-ton steel hopper	439*
Central Railroad of New Jersey car, Low side gondola	207*
Central Railroad of New Jersey car, Special baggage for scenery	615*
Central Railway Club, paper on Freight car troubles	551*
Central Railway Club (see Meetings)	
Central South African, Locomotives	20*
Centralia mechanical terminal, Ill. Cent.	353*
Ceylon's railways	628†
Chair, Non-vibrating for parlor cars	568*
Chambers, A., Career as locomotive engineer	1413*
Chambersburg Engineering Co., Hydraulic forging press	339*
Chart for forging machine work, by O. V. P. Bulleid	30*
Chart for tractive effort, by L. R. Pomeroy	436*
Chenoweth, E. G., Freight car designing	505
Chesapeake & Ohio canal	428†
Chesapeake & Ohio, Cylinder repaired with concrete	131*
Chesapeake & Ohio, Machine for turning ball joints	603*
Chesapeake & Ohio, Planing shoes and wedges	32*
Chesapeake & Ohio, Turning tires record	336*
Chief clerk to the master mechanic	70
Chicago, Burlington & Quincy, Special wrecking tools	147*
Chicago, Burlington & Quincy, Sock cars from scrapped box cars	379
Chicago, Milwaukee & St. Paul, Steel postal car	1410*
Chicago & North Western, Babbitting car brasses	267*
Chicago & North Western, Blower valve	160*
Chicago & North Western, Car brass boring machine	266*
Chicago & North Western, Injector repairs	243
Chicago & North Western, Main rod repairs	29*
Chicago & North Western, Overland limited	256†
Chicago & North Western, Protecting slide valve feed valves in shipment	132*
Chicago & North Western, Safety on	137*
Chicago & North Western, Slater front end	7*
Chicago & North Western, Smoke abatement devices	236*
Chicago & North Western, Smoke burning device	513*
Chicago & North Western, Tool for removing driving box cellars	142*
Chicago & North Western, Unloading car wheels	390*
Chicago & North Western, Wrench for removing lubricator choke plugs	371*
Chicago, Peoria & St. Louis, Locomotive valve gear	215*
Chicago Pneumatic Tool Co., Boyer pneumatic saw	509*
Chicago Pneumatic Tool Co., Gasolene driven air compressor	1467*
Chicago Railway Equipment Co., Brake beam	1526*
Chicago Railway Equipment Co., Roller side bearings	1530*
Chicago, Smoke Inspectors' Assoc. report	478
Chinese railway completed	144†
Chrome-Vanadium driving wheel tire specifications	16*
Chrome-Vanadium driving wheel tire test	15*
Chrome-Vanadium steel wheels	181
Chrome-Vanadium (see also Vanadium)	
Chuck for drill press, Frisco	374*
Chuck for threading studs, B. & M.	595*
Cincinnati Lathe & Tool Co., Engine lathe	272*
Cincinnati Shaper Co., Back geared shaper	1470*
Cincinnati Shaper Co., Heavy service crank planer	1265*
Clamp for crosshead, Frisco	377*
Clamp for driving boxes, Frisco	373*
Clamp for lifting tires, Frisco	373*
Clamp, Pneumatic for drill press, Thomson	103*
Clark, R. W., Boiler shop kinks, N. C. & St. L.	142*
Classification of locomotives, N. Y. C.	527*
Cleveland Car Specialty Co., Pressed steel carline	511*
Coaches, New York Central, steel	58*
Coal, Amount of bituminous produced in America	67†
Coal in Japan	323†
Coal lignite (see Lignite coal)	
Coal mine accidents	324†
Coal mine, Construction and operation of bituminous	293
Coal pusher in tender, Can. Pac.	120*
Coal, Safety squirt hose	564*
Coal, September shipments of anthracite	628†
Coal, Shipments of anthracite in October	662†
Coal sprinkler, Ejector for	334*
Coal sprinkler, Improved	510*
Coal, storage of	284*
Coal, Transporting through pipe lines	569*
Coale Muffler & Safety Valve Co., Securing safety valves	1522

Coaling stations, Modern locomotive.....	294	Delaware, Lackawanna & Western locomotive, 4-6-2 type.....	1390*	E	
College men and the railroad...520\$, 523\$, 577\$		Delaware, Lackawanna & Western tank well and valve.....	513*	Eccentric blade bender, B. & M.....	306*
College men and the railroads, by D. C. Buell.....	580\$	Delco safety water glass shield.....	333*	Eccentric, Drilling jigs for, Frisco.....	376*
College men and the railroads, by A. C. Humphreys.....	581\$	Design of car from repairman's standpoint..	143*	Eccentric strap liners, Turning in a boring mill.....	484*
College men and the railroads, by A. J. Wood.....	638\$	Design of counterbalance weights, by C. E. Bronson.....	529*	Eddy, W. J., Boiler studs and plugs.....	435
Commercial Acetylene Co., Lamp.....	1468	Design of locomotive connecting rods, H. A. F. Campbell.....	175*	Education (see Apprenticeship).....	
Committee circular answers.....	111\$	Design of tank cars, H. E. Parsons.....	445*	Efficiency of common labor on railroads....	1403\$
Committee on main and side rods, discontinued.....	1343\$	Detector for fractured crank pins.....	512*	Efficiency, paper at Blacksmiths' convention	493
Committee on subjects, Work of.....	1343\$	Detrick & Harvey, Journal bearing boring machine.....	566*	Efficiency tests on the Pennsylvania.....	682\$
Committee reports, Improved method of handling.....	1369\$	DeVoy, J. F., Address at Boilermakers' convention.....	316	Ejectors for coal sprinkling, Hancock.....	334*
Committee reports in early.....	1248\$	Diagram (see Chart).....		Electric arc welding, C. & C. Co.....	391*
Commonwealth Steel Co., Swing motion tender truck.....	397*	Diamond Specialty Co., Automatic cylinder cock.....	101*	Electric circuit, Analogy to pumps.....	182*
Competition, Car department.....2\$, 170\$, 578\$		Diaphragm, Acme apex.....	1530*	Electric circuits, Loss in transmission.....	183
Competition, Grinding.....405\$, 463\$, 635\$		Dickert, C. L., Driving boxes.....	422	Electric current, the Myriawatt.....	190
Connector, Automatic, Durbin.....	454*	Dickert, C. L., Increasing axle lathe output.....	34*	Electric headlight equipment, Installation and maintenance of.....367*, 429*, 546*, 603*	
Connecting rods (see Rods).....		Dickert, C. L., Machine shop kinks.....	75*	Electric locomotives.....	112\$
Connectors, Flexible metallic, Greenlaw.....	1501*	Dickert, C. L., Planing taper flanges on driving boxes.....	414*	Electric locomotives, Experimental in France.....	129
Consolidated Car Heating, Hose coupler.....	1500	Dickert, C. L., Punching spring planks, Cent. of Ga.....	131*	Electric power, Transmission of.....	182*
Contract, Standard form for fuel.....	289	Dickert, C. L., Smith shop kinks.....	253*	Electric railway companies, Number of.....	32\$
Convention, Air Brake Association.....	286*	Dickert, C. L., Shop kinks.....	537*	Electric riveting machine, C. & C. Co.....	394*
Convention, Blacksmiths' Association.....	487*	Die head, Landis stationary for pipe.....	626*	Electric Storage Battery Co., Axle lighting system.....	392*
Convention, Boilermakers' Association.....	314*	Dies for bulldozers.....	77*	Electric welding, paper at Blacksmiths' convention.....	486*
Convention, Criticisms of.....	285\$	Dies for brake beam hangers.....	368*	Electrical Engineers, Association of Railway meeting.....	1428
Convention, General Foremen's.....	406\$	Dies for swaging tube ends.....	142*	Electrical Engineers, Association of Railway, Tests of passenger car lighting.....	607
Convention Hall, Crowding in.....	1248\$	Dies for thread cutting, paper at Tool Foremen's convention.....	433	Electrification, Cost of.....	660\$
Convention, Railway Fuel Association.....	289*	Dies, Forging machine, paper at Tool Foremen's convention.....	434	Electrification of Melbourne Suburban Railways.....	516\$
Convention, Railway Storekeepers' Association.....	297*	Diesel locomotive.....	578\$	Electropneumatic brake, N. Y. R. R. Club.....	95
Convention, Painters' Association.....	539	Dieter Nut Co., Safety nut.....	1302*	Elwell-Parker Electric Co., Electric truck.....	1497*
Convention, Traveling Engineers' Association.....	467*	Distribution of power in compound cylinders.....	227\$	Employees, Number of railway, in Switzerland.....	76\$
Co-operation between mechanical associations	1278\$	Dodd, S. T., Motor cars.....	324*	Employment bureau, Boston.....	53\$
Cooper Hewitt Electric Co., Automatic tilting lamp.....	1402*	Doe, C. S., Standard oil house.....	310	Enamelled interior trimmings, paper at Painters' convention.....	544
Cooper-Hewitt Electric Co., Quartz lamp.....	1523*	Door, Frisco box car.....	559*	End construction for passenger cars, Collapsible.....	87*
Copper ferrule expanding tool.....	25*	Door, Rumsey freight car.....	216*	Engine house equipment and facilities.....	601
Copper in rails.....	344\$	Door, Rumsey, mail car.....	509*	Engine house for Mallets.....	577\$
Copyright, Notice of.....	1247\$	Dope, Preparing for journal boxes, N. & W.....	443	Engine house, Log for.....	600*
Cordell, Ernest, Efficient power plant operation.....	531	Dosser, J. E., Boiler studs and plugs.....	435	Engine house operating board.....	600*
Cosgrove, P. E., Boiler shop scaffold.....	494*	Doud, Willard, Mechanical terminal at Centralia.....	353*	Engine house organization.....	578\$
Cost, Decreasing shop operating.....	170\$	Dow, T. W., Air hose failures.....	329	Engine house organization and operation, by W. Smith.....	597*
Cost keeping, Locomotive.....	124*	Downing, I. S., Car shop arrangements and facilities.....	144	Engine house smoke.....	585\$
Cost of freight car repairs.....205, 635\$		Draft gear attachment, Keyoke.....	1504*	Engine house, Watering locomotives in.....	284\$
Cotton consumption.....	44\$	Draft gear, Improved lever, McCord.....	1529*	England, Private car troubles in.....	594\$
Counterbalance weight design.....	529*	Draft timber bolts.....	62\$	Enrollment Committee, Work of.....	1247\$
Coupler and parts, Marking.....	318	Drafting, False economy in, by C. J. Morrison.....	347\$, 361*	Ensign, J. F., Address at Boiler Makers' convention.....	314
Coupler, Engine and tender, Santa Fe.....	274*	Draper Mfg. Co., Pneumatic flue welder.....	25*	Equalizer design, by L. V. Curran.....	96*
Coupler horn braces forging dies.....	78*	Draper Mfg. Co., Tool for finishing ball joints.....	1401*	Equipment defects classified.....	236\$
Coupler, Major.....	1470\$	Draper Mfg. Co., Welder for superheater flues.....	1302*	Equivalent heating surface.....	62\$
Coupler, New design of car.....	101*	Drawbar, Laminated locomotive, Can. Pac.....	288*	Erie Railroad apprentice school.....	80*
Coupler, Penn freight.....	1422*	Drawbar yoke, Swiveled, McCord.....	1402*	Erie Railroad car, Special 75-ton flat.....	388*
Coupler, Standard.....	1426\$	Drawing office, Saving time in.....	229\$	Erie Railroad locomotive, 4-6-2 type.....	1392*
Coupler yoke shear and riveter, Watson-Stillman.....	1524*	Dresses Machine Tool Co., High duty radial drill.....	1300*	Erie Railroad, Mechanical department organization.....	645*
Crane, Compensating quadrant.....	455*	Drill press air clamp, M. K. & T.....	81*	Erie Railroad, Preparing hard grease.....	662*
Crane, Lathe chuck, Frisco.....	377*	Drill speeder, Graham.....	339*	Erie Railroad, Shop kinks.....	661*
Crane, Portable floor and hoist, Canton.....	568*	Drills, Air and electric.....	1521	Estabrook, H. M., Special ends for steel passenger cars, A. S. M. E.....	262
Crane on smoke stack.....	85*	Driving box, Brass liners for shoe and wedge fit, B. & O.....	75*	European roundhouse facilities.....	185*
Crane-grinder, Mummert-Dixon.....	393*	Driving box brasses, Table for slotting, M. K. & T.....	81*	Eveland Engineering & Mfg. Co., Electric riveting machine.....	394*
Crank pin crack detector.....	512*	Driving box brasses, Turning on boring mill.....	296\$	Exhaust system for grinding wheels.....	305
Crank pin turning machine, Portable, Pedrick.....	569*	Driving box cellars, Tool for removing, C. & N. W.....	142*	Exhibit of coupler committee.....	1279\$
Crawford, D. F., President's address, M. M. convention.....	1277\$, 1281*	Driving box kinks, B. & O.....	75*	Exhibit, Track, Atlantic City.....	1407
Croft Extension Car Step Co., Car step.....	1504	Driving box lateral plate, by H. A. Herndon.....	8*	Exhibits open in the evening.....57\$, 116\$, 173\$	
Crosshead, bronze liner, N. & W.....	428*	Driving box, Oil pipe for hub.....	76*	Exhibits open in the evening unsuccessful.....	1471\$
Crosshead, clamps, Frisco.....	377*	Driving box plugs, Molding.....	494*	Exhibits, Space occupied by.....	1247\$
Crosshead, Filling vise for, B. & M.....	596*	Driving box, Taking up lateral on.....	74*	Experiments with freight car trucks.....	42*
Crosshead shoes, Jig for drilling, B. & M.....	596*	Driving boxes, paper at General Foremen's convention.....	420*		
Crucible Steel Co., Tests of vanadium spring steel.....	70	Driving boxes, Planing taper flanges on.....	414*		
Cumberland terminal of the B. & O.....	591*	Driving boxes, Pouring brasses in, Lake Shore.....	200*		
Cups, Oil and grease for rods.....	366*	Driving boxes, Repairing locomotive, by M. D. Franey.....	109*		
Curran, L. V., Truck equalizer design.....	96*	Driving boxes, Shaper for.....	100*		
Currie, H. A., Electric lighting of passenger cars, A. S. M. E.....	259	Driving spring, Replacing on a Mallet.....	76		
Curtain, Side for cab.....	242*	Driving wheel, A new locomotive.....	450*		
Curtain Supply Co., Vestibule curtain shield.....	1524*	Driving wheel loads, Dynamic, discussion by A. W. Gibbs.....	12		
Curtis, Charles A., Removing flat spots from car wheels.....	204*	Driving wheel shackles, Frisco.....	374*		
Curves (see Chart).....		Driving wheel tines, Turning.....	173\$		
Curves of locomotive operation, by L. R. Pomeroy.....	68*	Driving wheels, Collar on axle.....	74*		
Cylinder boring bar, M. K. & T.....	82*	Drop forging, paper at Blacksmiths' convention.....	487		
Cylinder cock, Automatic, Watertown.....	101*	Drury, M. J., Engine and tender coupler.....	274*		
Cylinder repaired with concrete, C. & O.....	131*	Dudley E. L., Welding oil cups on rod straps.....	253*		
Cylinders, Alfree with piston valves.....	1401*	Dudley, S. W., Operation of triple valves.....	319*		
Cylinders, Larger locomotive.....	228\$	Duff Mfg. Co., Journal jack.....	45*		
Cylinders, Ratio of compound.....	227\$	Duffey, Paul R., Filter for shop drinking water.....	662*		
		Duffey, Paul R., Firing-up house for locomotive terminals.....	536		
		Duffey, Paul R., Machine for drilling tell-tale holes.....	252*		
		Duffey, Paul R., Tracks in shop buildings.....	648		
		Durbin automatic connector.....	454*		

D**F**

Fisher & Norris, Quick acting lever vise...	674*
Flange joints in locomotive pipe connections	1425§
Flat spots, Removing from car wheels.....	204*
Flight, Long distance in France.....	30†
Flight, Record breaking monoplane.....	582†
Flow meter, Improved, Gen. Elect. Co.....	507*
Flue welder, Draper.....	25*
Flue welding, paper at Blacksmiths' Con- vention.....	485*
Flues, Effect of superheaters on life of....	315
Flywheel breakage.....	430†
Foot-Burt Co., Mud ring and flue sheet drill.....	619*
Foreign subscribers to June Dailies.....	227§
Forest fires, Causes of.....	568†
Forest fires, Extinguishing.....	496†
Forging dies.....	77*
Forging by machine in railroad shops.....	77*
Forging machine work, Chart for, by O. V. P. Bulleid.....	30*
Forging machine (see Machine Tools).	
Forms for locomotive operation and cost...	124*
Fosdick Machine Tool Co., Horizontal bor- ing, drilling and milling machine.....	563*
Fosdick Machine Tool Co., Radial drill....	619*
Foundry, Delaware & Hudson.....	549*
Fowler, H., Motion work kinks.....	136*
Ft. Worth & Denver City, Driving Box lat- eral plate.....	8*
France, Nor. Ry. Baltic type locomotive....	190*
France, Experimental electric locomotives..	129
France, Forestry in.....	451†
Frane, M. D., Repairing locomotive driving boxes.....	199*
Franklin Railway Supply Co., Flexible arched metallic roof.....	1468*
Franklin Railway Supply Co., Improved fire door.....	1264*
Franklin Railway Supply Co., Tank and strainer valve.....	1367*
Franklin Railway Supply Co., Water joint between engine and tender.....	1400*
Freeman, L. D., Bulldozer in railway shops..	21*
Freeman, L. D., Locomotive shop kinks.....	1472§
Freight car construction, False economy in.	520§
Freight car troubles.....	551*
Freight car troubles, by J. C. Fritts.....	113§
Freight cars, Standard.....	113§
Freight train, Operating long, by F. B. Farmer.....	286*
French engine house.....	187*
Freyler, Daniel, Boiler studs and plugs....	435
Frisco (see St. Louis & Francisco).	
Fritts, J. C., Freight car troubles.....	551*
Fröblich, B. J., Handling scrap material....	115‡
Front end, Slater.....	7*
Fuel Association (see Railway Fuel Associa- tion).	
Fuel Association, Report of convention.....	289*
Fuel, Combustion of, on a locomotive.....	593†
Fuel convention, Notes on.....	284§
Fuel economy and moving pictures.....	57§
Fuel economy and operating department, pa- per at T. E. A. Convention.....	469
Fuel for motor cars.....	327*
Fuel record, Individual, for engineers.....	285§
Fuel saving and locomotive capacity.....	463§
Full crew laws, Cost of.....	332†
Fuller, C. E., Address at M. C. B. Assoc....	1430

G

Gage, Change of, in Australia.....	344†
Gage cock, Nathan.....	1300*
Gage cock holes, Locating on boiler.....	21*
Gage for setting tire, Cent. of Ga.....	537*
Gage, Wheel press recording.....	447*
Gages for Walschaert valve gear parts....	669*
Gaines, F. F., Cost of freight car repairs....	205
Gaines, F. F., Discussion of brick arch and front ends.....	475
Gaines, F. F., Discussion of locomotive boiler design.....	12
Gaines firebox on the Ill. Cent.....	362*
Gale, W. T., Safety on the C. & N. W....	137*
Gardner, Henry, Effect of pigments on lin- seed oil.....	188*
Gardner, Henry, paper on shop schedules..	423*
Garland car window air intake.....	564*
Gas-electric car, Pittsburgh & Lake Erie....	143*
Gas generator, Kerosene.....	1529*
Gas lighting with electric ignition.....	1498*
Gasoline, Quality of, for motor cars.....	327*
Gee locomotive stoker.....	111§
General Electric Co., Electric locomotive..	1357*
General Electric Co., Improved steam flow meter.....	507*
General Electric Co., Motor Car, P. & L. E.	143*
General Electric Co., Reversing motor drive for planers.....	46*
General Foremen's Association (see also Meetings).	

General Foremen's Association Con-
vention.

(Reports and discussion.)

Address by Robert Quayle.....	415
Apprenticeship.....	417
Driving boxes.....	420*

General Foremen's Association Con-
vention—(continued)

Election of officers.....	428
Engine house organization and opera- tion, by W. Smith.....	597*
Notes on convention.....	406§
President's address.....	415
Shop schedules, by Henry Gardner.....	423*
Superheater locomotives.....	416
Generator suspension, Safety axle.....	456*
Gerber, J. W., Dry lumber shed.....	307*
Germany, Prizes offered in.....	144†
Gibbs, A. W., Discussion of dynamic wheel loads.....	12
Gold Car Heating & Lighting Co., Thermo- static heating control.....	1522
Gondola car (see also Car).	
Gondola car, Designing a steel, by L. W. Wallace.....	381*
Goodrich, Chas. M., Cab window ventilator	676*
Goodyear Tire & Rubber Co., Flexible hose.	1500
Gould & Eberhardt, Shaper for heavy serv- ice.....	1365*
Graham Manufacturing Co., drill speeder...	339*
Grain car inspection, R. W. Schulze.....	33
Grand Trunk box car with hopper bottom..	323*
Grand Trunk improved throttle lever rigging	331*
Grand Trunk locking device for car and truck.....	104*
Grand Trunk locomotive, 2-8-2 type.....	1359*
Grapho-metal packing.....	160*
Grate shaker brackets, Riegel.....	1391*
Grate shakers, Shields for.....	122*
Grates, Best form of.....	316
Grates, Design of, by W. R. Hedeman.....	585*
Grease plug for side rods.....	396*
Grease, Preparing hard, for cellars.....	662*
Great lakes, Ore shipment on.....	409†
Great Northern motion work kinks.....	136*
Greece, Railway development in.....	569†
Greenlaw Mfg. Co., Lock for steam hose coupling.....	1398*
Greenlaw Mfg. Co., Metallic connectors....	1501*
Grenchenberg tunnel.....	574†
Grinders (see Machine Tools).	
Grinding competition.....	405§, 635§
Grinding machine for links.....	198*
Grinding wheels and their use, by W. R. Hedeman.....	662*
Grinding wheels, Exhaust system for.....	305
Grindstone at rip track.....	523†
Guard for grinding wheels, C. & N. W....	139*
Guard for wheel lathe, C. & N. W....	140*
Guard, Safety for rip saw, C. & N. W....	138*
Guards for end rods in automatic machines, C. & N. W.....	138*
Guards for lathe feed gears, C. & N. W....	141*
Guards for shop machinery, C. & N. W....	137*
Guatemala, Traffic in.....	142†
Gulf, Colorado & Santa Fe, Grain car in- spection.....	33
Guide bar blocks, by M. H. Westbrook....	115‡

H

Hall-Scott Motor Car Co., Cars.....	270*
Hale & Kilburn Co., Steel interior finish....	1525*
Hammer crane shock absorber, paper at Blacksmiths' Convention.....	493*
Hammer for removing side rod bushings, N. & W.....	484*
Hancock Inspirator Co., Ejector for coal sprinkler.....	334*
Hancock Inspirator Co., Improved coal sprinkler.....	510*
Hand holds, Device for securing.....	103*
Hanson, F. H., Effect of specifications on storekeepers' stock.....	299
Harlem Railroad.....	428†
Hasty, J. B., Thread cutting dies.....	433*
Hatler, W. E., Dry lumber shed.....	307*
Hauck tire heater.....	628*
Headlight, Electric, Pyle National.....	1365*
Headlight equipment, electric, Installation and maintenance of.....	367*, 429*, 546*
Heat treatment of case hardened steel....	347§
Heat treatment of metals, paper at Black- smiths' Convention.....	492
Heater for locomotive cab.....	242*
Heckman, A. V., Forms for locomotive op- eration and cost.....	124*
Hedeman, W. R., Boiler tube tools.....	23*
Hedeman, W. R., Design of locomotive grates.....	585*
Hedeman, W. R., Grinding wheels and their use.....	662*
Hedeman, W. R., Locomotive deck shield..	122*
Hedeman, W. R., Molding driving box plugs	494*
Henderson, G. R., Discussion of locomotive feed water heaters.....	13
Hendey Machine Co., Double head milling machine.....	1422*
Hendey Machine Co., Universal milling ma- chine.....	1302*
Hendrickson, B., Forging machine dies....	434
Hendrickson, H. A., Driving box lateral plate.	8*
Hervey, D. F., Grease plug.....	396*
Hervey locomotive stoker.....	393*
Heywood Brothers & Wakefield Co., Steel car seats.....	1467

Hobart-Alfree Co., Cylinders.....	1401*
Hodges trailer truck, New design of.....	74*
Hoffman, S., Discussion of superheaters....	13
Hoist, Electric, Sprague.....	1400
Hoist, Pneumatic for loading cars.....	85*
Holm, Sigurd, Truck equalizer design.....	350†
Hooks, Bending "S".....	191*
Hose, Air brake (see Air Brake Hose).	
Hose, Armored.....	219*
Hose, Armored squirt.....	334*
Hose coupler, Steam.....	1500
Hose coupling, Sheafe.....	332*
Hose, Flexible metallic.....	1500
Hose, Machine for mounting, M. K. & T....	84*
Hose, Metallic for locomotive.....	1400*
Hose, Non-kinking air and steam.....	219*
Hospital room in shops.....	84*
Humphreys, A. C., College men and the railroads.....	581†
Humphrey, A. L., Air brakes on steel pas- senger cars, A. S. M. E.....	260
Hungarian State Railways, Device for pre- venting scale.....	17*
Hungarian State Railways, Engine house...	185*
Huntley, W. P., Cracked cylinder repaired with concrete.....	131*
Huntley, W. P., Grindstone at rip track....	523†
Hydraulic forging and bending press, Cham- bersburg.....	339*
Hydroplanes.....	209†

I

Ice handling.....	300
Illinois Central, Apprenticeship on.....	249*
Illinois Central, Gaines firebox on locomotives	362*
Illinois Central, Hold-up on the.....	392†
Illinois Central, Locating defective car wheels.....	152*
Illinois Central, Mechanical terminal at Cen- tral.....	353*
Illinois Central, Shop improvements at Burnside.....	193*
Illuminating Engineering Society (see Meet- ings).	
India, Branch line in.....	392†
India, New line for.....	123†
Indian railway mileage.....	516†
Indian railway policy.....	100†
Indicator cards, Steam consumption from..	349§
Independent Pneumatic Tool Co., Air and electric drills.....	1521
Ingersoll-Rand Company, "Little David" riveting hammer.....	332*
Injector repairing, by Chas. Markel.....	243
Injuries, Hospital room in shops.....	84*
Inspection of arch bars, Mirror for.....	96*
Inspection of grain cars, by R. W. Schulze.	33
Inspection, Locomotive, P. & R.....	470*
Inspection, Overhead, of box cars, M. C. B.	1477
Inspectors, Developing efficient car.....	380
Instruction of apprentices on the Ill. Cent. and Cent. of Ga.....	249*
Instruction of car men on interchange rules	154
Insulation of refrigerator cars, by M. R. Parks.....	613
Interchange rules and car men.....	112§
Interchange rules, Changes in.....	1425§
Interchange rules, Instruction of car men..	154
International Engineering Congress (see Meetings).	
International Oxygen Co., Oxygen gener- ators.....	1400
International Railway Fuel Association (see Railway Fuel Association).	
International Railway General Foremen's Association (see General Foremen's Asso- ciation).	
Interviews at Atlantic City Convention....	1412
Ireland, Warning trains of wind storm....	366†
Italian railway earnings.....	71†

J

Jack, Car journal, Duff.....	45*
Jack, Car journal, Reliance.....	1266*
Jack, Hydraulic pit, Watson-Stillman.....	271*, 1265*
Jacobs, H. W., European roundhouse facil- ities.....	185*
Jacobs-Shupert boiler tests.....	59§, 63*
Jenkins Bros., Brass gate valve.....	1501*
Jerguson Mfg. Co., Improved Klingner type water gage.....	1299*
Jesson, J. A., Air pump head repairs.....	605*
Jesson, J. A., Grinding piston rings of air brake apparatus.....	132*
Jib crane, Ball bearing, W. & L. E.....	370*
Johns-Manville Co., H. W., Non-kinking air and steam hose.....	219*
Johnson, A. G., Locomotive operation....	50
Joliet Railway Supply Co., Roller side bear- ings.....	1521*
Joliet Railway Supply Co., Truck centering center plate.....	1524*
Journal box for the Roumanian railways...	1530
Journal box lid, Locked.....	1525*
Journal box lid, Pinless, McCord.....	1522*
Journal box with steel inserts.....	1499*
Justice, Philip S. & Co., Journal jack.....	1266*

K

Kansas City Southern, Work on bulldozers.	77*
Kavanagh, D., Platforms for casting.	313
Kemp Smith Manufacturing Co., Milling machine	217*
Kendall, A. H., System as applied to shop repairs of locomotives, paper at Can. Ry. Club	341
Kendrick Improved Valve Co., Angle cock.	1265*
Keyser, Car department notes.	203*
Keyser, Repairing ballast cars.	608
Keyoke Railway Equipment Co., Draft gear attachment	1504*
Kiesel, W. F., Jr., Possibilities of the Atlantic type locomotive.	11
Kiesel, W. F., Jr., Problems of steel passenger car design	257
Klauer Manufacturing Co., Charcoal car heaters	451*
Kling bolt	158*
Knight, John C., Air brake safety attachment	1423*
Knight, John C., Car valve.	1468*
Koch, Felix, Steel interior finish for cars, A. S. M. E.	259
Kropidowski, V. T., Link grinding machine	198*
Kropidowski, V. T., Pressing in piston valve bushings	244*
Kropidowski, V. T., Turning eccentric strap liners in a boring mill.	484*
Kropidowski, V. T., Installation and maintenance of electric headlights. 367*, 429*, 546*,	603*

L

Ladder, Safety, for box cars.	220*, 1469*
Lagonda Manufacturing Co., Device for removing scale	219*
Lake Shore & Michigan Southern locomotive, 2-8-2 type	228\$, 231*
Lake Shore & Michigan Southern, Repairing driving boxes	199*
Lamp, Automatic tilting	1402*
Lamp, Quartz electric.	1523*
Landis Machine Co., Stationary pipe die head	626*
Lanz superheater and feed water heater.	71*
Lathe, Axle, Increasing output.	34*
Lathe capacity, A basis for measuring, by L. R. Pomeroy.	133*
Lathe chuck crane, Frisco.	377*
Lathe dog, Heavy, Frisco.	374*
Lathe, Driving wheel, Niles.	336*
Lathe milling attachment, Santa Fe.	84*
Lathe tool post, Turret.	34*
Lathe (see also Machine tools).	
Lavatory, Folding, for cars.	1523*
Laws, Analysis of caboose.	87
Laws, Locomotive headlight, Compilation of	588
Lawson, A. B., Cab furnishings.	241*
Lawson, A. B., Driving box kinks.	75*
Lea-Courtney Co., Cold metal saw.	1367*
Lea Equipment Co., Cold cut-off saw.	1421*
Legal day's work in New York.	366†
Lehigh Valley, Coal saving on.	123†
Lehigh Valley locomotive, 2-8-2 type.	1408*
Lehigh Valley mine rescue car.	263
Lehon, Tom, Letter on exhibits.	1404\$
Letter ballot, Result of M. C. B.	615
Letter ballot, Result of M. M.	588
Liberty Mfg. Co., Arch tube cleaners.	1300*
Lighting fixtures for postal cars.	218*
Lighting of postal cars.	212*
Lighting, Tests of passenger car.	607
Lignite, Burning successfully on locomotives	285\$
Lignite coal analysis.	290*
Lignite coal cost.	290*
Lignite coal for locomotives.	290*
Lima Locomotive Corporation locomotive, 4-6-2 type, Erie.	1392*
Lime, Mill for grinding.	339†
Link, P. C., Superheater locomotives.	416
Link grinding machine.	198*
Link Side Bearing Co., Car truck.	673*
Link side bearing truck.	673*
Linseed oil, Effect of pigments on the constants of	188*
List, The authorized, by E. J. McVeigh.	304
Lister, F. G., Air sander for interurban cars	482*
Loading hoist, Pneumatic.	85*

Locomotive.

Age	154†
Air pump, Compound	104*
Arch tubes, Tools for applying	28*
Associated Lines standard.	5*
Atlantic type and a heavy train.	529
Atlantic type, Possibilities of, by W. F. Kiesel, Jr.	11
Baltic type, Nor. Ry. of France.	190*
Boiler design discussion by F. F. Gaines	12
Boiler, Device for preventing scale.	17*
Boiler explosion, An early.	1411*
Boiler inspection, Report of federal.	32
Boiler, Service of Brotan.	128*
Boiler tests, Jacobs-Shupert.	59\$, 63*

Locomotive (continued)

Boiler tube tools, by Walter R. Hedeman	23*
Boiler, Ill. Cent. 2-8-2 type.	362*
Boiler, Lake Shore 2-8-2 type.	233*
Boiler, P. & R. 4-4-2 (Insp.) type.	480*
Boilers, Safety devices.	33*
Boilers, Sealing	295
Boilers, Weak and unsafe condition of	314
Blower valve, C. & N. W.	160*
Brake equipment, Care of, paper at T. E. A. Convention.	477
Brake rigging, P. & R.	412*
Broad gage, Last, in England.	337†
Cab deck, Shield for.	122*
Cab furnishings	241*
Cab vestibule, Can. Pac.	112\$, 117*
Cab window ventilator.	476*
Classification sheet, N. Y. C.	527*
Coaling station, Modern.	294
Connecting rods, by H. A. F. Campbell	175*
Counterbalance weight design, by C. E. Bronson	529*
Cylinder cock, Automatic.	101*
Cylinder repaired with concrete, C. & O.	131*
Cylinders, Larger	228\$
Cylinders, Ratio in Mallets.	227\$, 237*
Cylinders, Stumpf	304*
Deck shield, B. & O.	122*
Design, Errors in.	1\$
Diesel	578\$
Dimensions, Tabular comparison.	18, 18, 19, 72, 73
Drawbar, Laminated, Can. Pac.	288*
Drifting device, Operation and maintenance of	643*
Driving box, Brass liners for shoe and wedge fit, B. & O.	75*
Driving box lateral plate.	8*
Driving box oil pipe for hub.	76*
Driving box, Repairing, by M. D. Francy	199*
Driving box, Taking up lateral.	74*
Driving boxes, by C. L. Dickert.	422
Driving boxes, by G. H. Logan.	420*
Driving wheel, New.	450*
Duplicate parts for.	1280*
Early and train	324†
Electric	112\$
Electric 2400 v. direct current.	1357*
Electric, Experimental in France.	129
Engineer, A remarkable career.	1413*
Equipment, Condensed record.	527*
Factors in the selection of, by O. S. Beyer, Jr.	9
Feed water heaters discussion by G. R. Henderson	13
Fires, Kirdling	536
First Baldwin	409†
Fitted for a fire engine.	588*
Fire door, Improved Franklin.	1264*
Firebox, Brotan, Service of.	113\$, 128*
Fireboxes, Autogenous welding on.	670*
Firing practice	293
Frame brace, P. & R.	411*
Frame, Lake Shore, 2-8-2 type.	234*
Frame, Vanadium cast steel, Test of.	397*
Front end for burning lignite.	290*
Front end, Slater	7*
Fuel and water consumption curves.	68*
Gage cock and cut-out valve.	1266*, 1300*
German	280†
Grate, Design, by W. R. Hedeman.	585*
Grates, Best form of.	316
Headlight equipment, Installing electric.	367*, 429*, 546*, 603*
Headlight laws, Compilation of.	588
Heating surface, Equivalent.	62†
Hot boxes	283\$
Lubricator auxiliary valve, MacBain.	235*
Lubricator, Improved force feed.	137*, 1267*
Main rod repairs, by C. D. Ashmore.	29*
Mallet, Distribution of power in, by Paul Weeks.	237*
Narrow gage, Cent. So. African.	20*
Nozzle, Rectangular, Cent. of Ga.	476*
Number ordered in 1912.	3\$
Operation and cost, Forms for.	124*
Operation, by A. G. Johnson.	50
Operation curves, by L. R. Pomeroy.	68*
One hundredth anniversary of.	380†
Painting, Economy in.	541
Passenger, Largest, in Europe.	190*
Pipe clamp, Ayers.	234*
Practice, Modern	230\$
Progress	1344\$
Ratios, Tabular comparison of.	18, 19, 72, 73
Reverse gear, Power.	627*
Reverse gear, Screw and lever, P. & R.	481*
Rod brass, Improved, C. & N. W.	102*
Rods	170\$
Rods, Comparison between American and European	181*
Rods, Designing, by H. A. F. Campbell.	175*
Rods, Service of Vanadium.	648
Safety valves, Location of gages in setting	533*
Screw reverse gear, P. & R.	412*
Selection of	3\$
Shoes and wedges, Laying off, Can. Pac.	307*

Locomotive—(continued)

Shoes and wedges, Planing, C. & O.	32*
Smoke abatement devices test.	236*
Springs, Machine for testing, P. R. R.	159*
Spring, Replacing driving.	76
Standard, Discussion by H. H. Vaughan	11
Standard of the Associated Lines.	1\$
Starting fires in.	643
Steam and electric.	594†
Stoker, Gee	111\$
Stoker, Hervey	393*
Stoker, Standard	621*, 1399*
Sulzer-Diesel	589*
Superheated steam, Advantages of, discussion by C. D. Young.	15*
Superheater and feed water heater, Larz	71*
Superheater discussion by S. Hoffman.	13
Superheater flues, Tools for applying.	27*
Superheater, Operating, paper at T. E. A. convention	467
Superheater, paper at General Foremen's convention	416
Superheater, report at M. M. convention	1373
Superheater, Young	675*
Tabular comparison of 4-4-2, 4-6-0, 2-6-0 and switching types	19
Tabular comparison of 4-8-2, 4-6-2, and 2-6-2 types	18
Tabular comparison, 2-10-2, simple freight, Mallet type.	72, 73
Tender truck, Six-wheel, Santa Fe.	526*
Tender truck, Swing motion, Commonwealth	397*
Tender without underframe, Can. Pac.	120*
Terminal firing-up house.	536
Terminal, Ill. Cent., Centralia.	353*
Testing plant, Purdue.	171\$, 1344\$, 1350
Tests of superheater, Report at M. M. convention	1384*
Tests, Pennsylvania class E-6-s.	12
Three cylinder	1369\$, 1374*
Throttle lever rigging, Improved.	331*
Tire heater	309*
Tires, Chrome-Vanadium. Tests of.	15*
Tires, Service of Vanadium.	648
Tires, Specifications for Chrome-Vanadium	16*
Tool equipment	577\$
Tractive effort chart.	436*
Trailer truck, New design.	74*
Truck tire turning test.	466†
Valve gear	169\$
Valve gear driven from crosshead.	215*
Valve gear, Formula for saddle pin offset	647*
Valve gear, Gages for parts of Walschaert	669*
Valve setting and cylinder ratios in Mallets	237*
Water gage, Babcock safety.	333*
Water glass, Improved Klinger.	1299*
Water glass shield, Delco.	333*
Water glass shield, Lake Shore.	235*
Water joint, Franklin	1400*
Watering in the engine house.	284\$
Wheel loads, Dynamic, discussion by A. W. Gibbs.	12
0-6-0 type, Illinois Central, Gaines firebox	362*
2-6-0 type, Associated Lines.	6*
2-8-0 type, Wheeling & Lake Erie.	641*
2-8-2 type, Associated Lines.	6*
2-8-2 type, Comparison of recent.	233*
2-8-2 type, Grand Trunk.	1359*
2-8-2 type, Illinois Central, Gaines firebox	362*
2-8-2 type, Lake Shore	231*
2-8-2 type, Lehigh Valley	1408*
2-8-2 type, P. & R.	411*
2-8-2 type, Santa Fe.	525*
4-4-2 type, P. & R.	479*
4-6-2 type, Associated Lines.	5*
4-6-2 type, Can. Pac.	117*
4-6-2 type, D. L. & W.	1390*
4-6-2 type, Erie	1392*
4-6-2 type, New Haven.	1293*
4-6-2 type, Santa Fe.	525*
4-6-4 type, Northern Railway of France	190*
4-8-2 type, Missouri Pacific.	583*
Lodge & Shipley Machine Tool Co., Lathe.	1301*
Logan, G. H., Paper on driving boxes.	420*
Louisville & Nashville, Air brake apparatus, Grinding piston rings.	132*
Louisville & Nashville, Air pump steam head repairs	605*
Louisville & Nashville, Mirror for inspecting trucks	96*
Lubricator auxiliary valve, MacBain.	235*
Lubricator choke plugs, Wrench for removing	371*
Lubricator, Force feed, McCord.	1267*
Lubricator, Force feed, Improved.	157*
Lumber, Moisture determination, Canadian Pacific	653*
Lumber shed	307*
Lutz-Webster Engineering Co., Wrench.	1503*
Lyndon, G. W., Car wheel failures.	329†

M

MacBain, D. R., Address at T. E. A. convention	476
MacBain auxiliary lubricator valve.....	235*
Macedonia, Railway accident in.....	395†
Machine for drilling tell-tale holes in stay-bolts	252*

Machine Tools.

Arrangement at Burnside shops.....	194*
Basis for comparing.....	114‡
Boring, drilling and milling machine, Fosdick	563*
Boring machine for car brasses, C. & N. W.	266*
Boring machine, Double, for journals, Bement	396*
Boring machine, Horizontal, Pawling & Harnischfeger	99*
Combination machine, Quadruple, Wiener	452*
Drill, Mud ring and flue sheet, Foote-Burt	619*
Drill, Radial, American Tool Works Co.	1264*
Drill, Radial, high capacity, Fosdick.....	619*
Drill, Radial, high duty, Baush.....	511*
Drill, Radial, high duty, Dreses.....	1300*
Exhibit	1403‡
Feeds, cuts, speed, metal removed, etc., table	248*
Forging machine, Heavy, National.....	566*
Forging press, Chambersburg.....	339*
Gearing	1404‡
Grinder, Double spindle, Besly.....	628*
Grinder for sharpening curved tooth files, Vixen	396*
Grinder, Oilstone	273*
Grinding for links.....	198*
Grinding machine, Universal, Morse.....	1402*
Grinding machine, Wilmarth & Morman	1267*
Grinding machine with crane, Mummert-Dixon	393*
Guard (see also Guards).....	
Guards, C. & N. W.	137*
Journal bearing boring machine, Duplex, Detrick & Harvey.....	566*
Lathe capacity, Basis for measuring.....	133*
Lathe, driving wheel, New model, Niles	336*
Lathe, flat turret, Aeme.....	677*
Lathe, heavy engine, Cincinnati.....	272*
Lathe, improved, Lodge & Shipley.....	1301*
Lathe, geared head, Reed.....	1366*
Lathe, 12 speed geared head, American Tool Works Co.	1398*
List of, at locomotive terminal, Centralia	355*
Milling machine, double head, Hendey	1422*
Milling machine, geared universal, Hendey	1302*
Milling machine, heavy, Kempsmith.....	217*
Milling machine tests, English.....	48
Milling machine for links, Newton.....	46*
Motor drive, Reversing for planers, Gen. Elect.	46*
Motor for shop service, Westinghouse.....	159*
Nut tapper, Semi-automatic, National.....	45*
Operation diagram, by L. R. Pomeroy.....	248*
Planer, Heavy service crank, Cincinnati	1263*
Planer drive reversing motor, Triumph	269*
Planers, Reversing motor drive, Gen. Elect.	46*
Saw, Boyer pneumatic.....	519*
Saw, Cold metal, Lea-Courtney.....	1367*
Saw, Cut-off, Lea.....	1421*
Shaper, Back geared, Cincinnati.....	1470*
Shaper for driving boxes, Newton.....	100*
Shaper, Heavy service, Gould & Eberhardt	1365*
Shaper, Heavy duty back geared, Stockbridge	338*
Shear and riveter for coupler yokes.....	1525*
Underpowered	408‡
Vertical turret lathe, Speed change mechanism on	1497*
Madden, T. P., Care of superheater tubes.....	350‡
Madras, Transportation in.....	350†
Mahr Manufacturing Co., Oil burner.....	624*
Main rods (see Rods and Locomotive rods).....	
Mandrel for sectional tube expanders.....	271*
Manual for firing practice.....	293
Mark Manufacturing Co., Cold drawn union steel	337*
Markel, Chas., Repairing injectors.....	243
Martin, C. W., Location of steam heat traps	328
Marvin & Casler, Offset boring heads.....	335*
Master Blacksmiths' Association asks assistance of M. M. Association.....	1471‡

Master Blacksmiths' Association Convention.

(Reports and discussion.)

Case hardening	491*
Cast steel in the blacksmith shop.....	492
Drop forging	487
Efficiency	493
Election of officers	494

Master Blacksmiths' Association Convention—(continued)

Electric welding	486*
Flue welding	485*
Hammer crane shock absorber.....	493*
Heat treatment of metals.....	492
Notes on the convention.....	464‡
Oxy-acetylene welding and cutting.....	490*
Piece work	490
Spring making and repairing.....	488*
Tools and formers	486
Truck transoms for passenger coaches.....	487*
Master Boiler Makers' Association (see Boiler Makers' Association and Meetings).	

Master Car Builders' Association Convention.

(Reports and discussion.)

Abuse of the repair card.....	1461
Address of President Fuller.....	1430
Air brake hose specifications.....	1509*
Brake shoe and brake equipment.....	1437
Capacity marking of freight cars.....	1490
Car construction	1512*
Car trucks	1480*
Car wheels	1447*
Coupler and draft equipment.....	1438*
Damage to freight equipment by unloading machines	1507*
Election of officers.....	1518
Freight car repair bills.....	1460
Letter ballot, Result of.....	615
Lettering cars	1490
Overhead inspection of box cars.....	1477
Prices for labor and material.....	1459
Repair card abuse.....	1489
Retirement of 20 and 25 ton cars from interchange	1487
Revision of form of present specifications	1512
Revision of the rules of interchange.....	1451
Revision of standards and recommended practice	1432
Rules for loading material.....	1475*
Safety appliances	1475
Specifications for freight car truck sides and bolsters	1486
Tank cars	1486
Train brake and signal equipment.....	1435*
Train lighting	1483*
Train pipe connections for steam heat.....	1484*
Master mechanic's duties.....	70

Master Mechanics' Association Convention

(Reports and discussion.)

Committees for 1913	1259
Election of officers for 1914.....	1390
Electric equipment maintenance, by C. H. Quereau	1347*
Locomotive testing plant, by E. C. Schmidt	1350*
Main and side rods	1350*
Maintenance of locomotive boilers.....	1351*
Mechanical stokers	1285
Minimum requirements for locomotive headlights	1356
President's address	1281*
Program of convention.....	1249
Result of letter ballot.....	588
Revision of standards.....	1291
Smoke prevention	1377*
Special alloys and heat treated steel in locomotive construction	1376
Specifications for locomotive cast steel frames	1347
Specifications for materials used in locomotive construction	1372
Steel tires	1356*
Subjects	348‡, 1356
Superheater locomotives	1373
Test of superheater locomotives by C. H. Benjamin and L. E. Endsley.....	1384*
Three-cylinder locomotives, by J. Snowden Bell	1374
Wheels, engine and tender.....	1381*

Master Painters' Association (see Painters' Association and Meetings).

McConway & Torley Co., Freight coupler.....	1422*
McCord & Co., Draft gear, lever type.....	1529*
McCord & Co., Force feed lubricator.....	157*, 1267*
McCord & Co., Journal box with steel inserts	1499*
McCord & Co., Locked journal box lid.....	1525*
McCord & Co., Pinless journal box lid.....	1522*
McCord & Co., Swivel drawbar yoke.....	1402*
McCord Mfg. Co., Universal weather stripping	1501*
McGee, W. A., Shop kinks.....	85*, 309*
McVeigh, E. J., The authorized list.....	304
Mechanical associations, Co-operation between	1278‡
Mechanical department appointments.....	111‡
Mechanical engineer, The	2‡
Mechanical stokers	1277‡, 1285

Meetings

American Electric Railway Association.....	571
American Museum of Safety.....	680
American Railway Tool Foremen's Association	34, 399
American Society of Mechanical Engineers	50, 162, 221, 571, 629
Air Brake Association.....	277
Canadian Railway Club.....	51, 106, 221, 341
Car Foremen's Association of Chicago.....	629
Central Railroad Club.....	106, 221
Federation of Trade Press Associations convention	518
General Foremen's Association.....	50, 161, 221, 341
Illuminating Engineering Society convention	341
International Engineering Congress.....	400
Master Boiler Makers' Association.....	277
Master Car and Locomotive Painters' Association	277
New England Railroad Club.....	106, 162, 277, 399
New York Railroad Club.....	50, 106, 161, 222, 341
Northern Railway Club.....	50
Pennsylvania Industrial Welfare Efficiency convention	571
Railway Business Association.....	50, 629
Railway Club of Pittsburgh.....	106
Railway Fire Protection Association.....	572
Railway Fuel Association.....	161, 277
Railway Storekeepers' Association.....	51, 277
Railway Supply Manufacturers' Association	106
Traveling Engineers' Association.....	341
Western Canada Railway Club.....	277
Western Railway Club.....	50
Metallic connectors, flexible, Greenlaw.....	1501*
Metz, August, Thread cutting dies.....	433
Mill for grinding lime.....	339†
Milling machine (see Machine tools).....	
Minnesota rate case decision.....	1248‡
Missouri, Kansas & Texas, Paint shop at Sedalia	483*
Missouri, Kansas & Texas, Shop kinks.....	81*
Missouri Pacific, Locomotive, 4-8-2 type.....	583*
Monarch Steel Castings Co., Coupler.....	1504*
Moral awakening in supply business.....	1403‡
Morey, E. H., Babbitting car journal brasses	267*
Morey, E. H., Truck wheel tire turning test	466‡
Morey, E. H., Turning driving wheel tires.....	173‡
Morrison, C. J., False economy in drafting.....	361*
Morrison, C. J., Underpowered machine tools	408‡
Morse Twist Drill & Machine Co., Universal grinding machine	1402*
Morton, Robert C., Oil and grease cups for rods	366*
Motor buses in London	456†
Motor car service in Bavaria.....	53†
Motor cars, by Dodd and Arnold.....	324*
Motor cars, Cost of operation.....	328*
Motor for shop service, Westinghouse.....	159*
Motor, Reversing, for planer drive, Gen. Elec.	46*
Motor, Reversing, for planer drive, Triumph	269*
Motor, Single-phase, Westinghouse.....	1521
Motors, Application to tools at Burnside.....	196*
Mounce, R. S., Mechanical department organization, Erie	645*
Mounce, R. S., Special 75 ton flat car.....	388*
Moving pictures in railway educational work	57‡, 67, 174‡
Mudge & Co., Car window air intake.....	564*
Mummert-Dixon Co., Grinder.....	273*
Mummert-Dixon Co., Crane-grinder.....	393*
Murphy X L A roof on Frisco box cars.....	556*
Murray, E. A., Kindling locomotive fires.....	536
Murray, E. A., Tire turning record.....	62‡
Murray, E. A., Turning driving wheel tires	640‡
Myriawatt, Standardization of the	190

N

Nagle, John H., Receptacle for waste drinking cups	561*
Narrow gauge locomotives, Central South African Railway	20*
Nashville, Chattanooga & St. Louis, Boiler shop kinks	142*
Natal, Flood damage in.....	397†
Nathan Mfg. Co., Cut-out valve for water gages	1266*
Nathan Mfg. Co., Gage cock	1300*
Nathan Mfg. Co., Lubricator for air cylinders	1368*
National Oil Gas Generator Co., Generators	1529*
National Machinery Co., Forging machine.....	566*
National Machinery Co., Semi-automatic nut tapper	45*
National Railway Devices Co., Coupler release rigging	678*
Netherland railway improvements.....	206†
New England Railroad Club (see Meetings).....	
New York Central & Hudson River, Steel box car end	40*
New York Central & Hudson River, Traveling safety exhibit.....	405‡
New York Central Lines, Record of locomotive equipment	527*

New York Central Lines, Steel passenger car	58§
New York, New Haven & Hartford, Indirect car lighting	395*
New York, New Haven & Hartford, Traffic through Harlem river yard	516†
New York Railroad Club (see Meetings)	
New York State Department of Labor, Specifications for exhaust systems	305
Newman, C. M., Boiler tube rack	606*
Newman, C. M., Paper on driving boxes ..	422
Newton Machine Tool Works, Locomotive link milling machine	46*
Newton Machine Tool Works, Shaper for driving boxes	100*
Niagara Frontier Car Inspection Association, Damage to cars by improper loading ..	649*
Nickel-Chrome Chilled Car Wheel Co., Car wheels	1529
Niles-Bement-Pond, Boring machine, Double journal bearing	396*
Niles-Bement-Pond, Driving wheel lathe	336*
Norfolk Southern, Box car construction and repair men	255
Norfolk & Western, Bronze liners for cross-heads	428*
Norfolk & Western, Car repair notes	442*
Norfolk & Western, Forms for locomotive operation and cost	124*
Norfolk & Western, Firing up locomotives ..	643
Norfolk & Western, Hammer for removing side rod bushings	484*
Norfolk & Western, 90 ton gondola car ..28,	35*
Northern Railway Club (see Meetings)	
Northern Railway of France, 4-6-4 type locomotive	190*
Norway, New railroad in	345†
Nowell, H. T., Eccentric blade bender	306*
Nowell, H. T., Machine shop kinks	595*
Nowel, H. T., Turning four-bar crosshead wrist pins	192*
Nut, Dieter safety	1302*
Nut tapper, Semi-automatic, National	45*

O

Oil burner	310*
Oil burner for car repairing, N. & W.	443
Oil burner, Mahr	624*, 1522
Oil cups, Welding on rod straps	253*
Oil fuel in Austria	79†
Oil and grease cups for rods	366*
Oil house, Standard, Paper at Storekeepers' convention	310
Olsen, Timius, & Co., Testing machines for P. R. R.	159*
Operating department and fuel economy, Paper at T. E. A. convention	469
Operation, Improvements in	112§
Operators, Selection for oxy-acetylene welding, by J. C. Reid	243
Ore shipment on the Great Lakes	74†, 409†
Organization of engine houses	597*, 578§
Organization, Mechanical department, Erie, 635§,	645*
Osmer, J. E., Improved rod brass	102*
Oven for baking paint on steel passenger cars, P. R. R.	245*
Overhead inspection of freight cars ..1471§,	1477*
Owner's defects, Extension of list	1471§
Oxy-acetylene welding and cutting, Paper at Blacksmiths' convention	490*
Oxy-acetylene welding, Selection of operators for	243
Oxygen generators	1400
Oxygen and illuminating gas, Welding and cutting with	452*

P

Packing, Grapho-metal	160*
Packing, Metallic, for piston rods	565*
Packing rings, Gang tool for cutting, Cent. of Ga.	75*
Paint baked on steel passenger cars, P. R. R. Paint brushes for steel equipment, Paper at Painters' convention	542
Paint, Effect of pigments on linseed oil ..	188*
Paint, Rust inhibitive, Paper at Painters' convention	541
Paint on rusted surfaces	627†
Paint shop at Sedalia, M. K. & T.	483*
Paint shop supplies, Paper at Painters' convention	545
Paint, Test of	188*

Painters' Association Convention.

(Reports and Discussions.)

Economy in locomotive painting	541
Election of officers	545
Enameled interior trimmings	544
Finishing steel passenger cars	539
Maintenance of passenger cars	545
Notes on convention	520§
Paint brushes for steel equipment	542
Paint protection for steel equipment	544
President's address	539
Railway paint shop supplies	545
Rust inhibitive paint	541
Safety first	543

Painting steel passenger cars, by C. D. Young	245*
Pan for handling material, B. & O.	21*
Paraguay, Proposed line for	569†
Parcels post record	212†
Parish, Le Grand, Advantages of brick arch ..	473
Park, W. L., Address at Boiler Makers' convention	314
Park, W. L., Address at T. E. A. convention ..	477
Park, W. L., Railroads and the college man ..	640‡
Parks, M. R., Proportions of refrigerator cars ..	613
Parkesburg Iron Co., Superheater tubes ..	1266*
Parsons, H. E., Tank car design	445*
Parsons, H. E., Truck equalizer design	408*
Patent applications	80†
Patton, F. E., Use of sand on locomotives ..	594
Pawling & Harnischfeger, Boring machine ..	99*
Peabody, F. S., Address at Fuel convention ..	289
Peabody, R. T., Apprentice instruction	311*
Pedestal binder hoist, Cent. of Ga.	538*
Pedrick Tool & Machine Co., Portable turning machine	569*
Penalties under Federal laws	242†
Penn freight car coupler	1422*
Pennsylvania, Car, Train lighting instruction ..	655*
Pennsylvania, Efficiency tests on	682†
Pennsylvania Industrial Welfare Efficiency convention	571
Pennsylvania Railroad, Atlantic type locomotive and a heavy train	529
Pennsylvania Railroad, Automobile car, steel frame	1492*
Pennsylvania Railroad, Fires	204†
Pennsylvania Railroad, Gee locomotive stoker ..	155*
Pennsylvania Railroad, Oven for baking paint on passenger cars	245*
Pennsylvania Railroad, Painting steel passenger cars	245*
Pennsylvania Railroad, Rivet heater, Portable	256*
Pennsylvania Railroad, Testing equipment ..	159*
Pensioners, Number on P. R. R.	236†
Perritt, J. F., Smith shop tools	191*

Personals (General).

(Above grade of Master Mechanic.)

Barclay, Frank B.	342
Barnum, M. K.	342*, 400
Bell, Robert W.	342
Bentley, H. T.	630*
Brewer, J. W. G.	342
Brown, F. S.	51
Brown, H. B.	458
Carpenter, J. H.	107
Chenoweth, E. G.	400*
Chidley, Jos.	163
Conn, J. J.	681
Cook, J. S. (obituary)	574*
Crownover, G. M.	515, 572*
Crozier, Andrew S. (obituary) ..	1407
Dalzell, H. E.	51
Dickerson, S. K.	163
Dunlop, P. T.	458
Enright, J. F.	681
Ensign, J. F. (obituary)	633*
Fiedler, Max	278
Freeman, Lewis D.	51
Frey, W. J.	681
Funk, G. H.	681
Gardner, H. W.	342
Gardner, J. E.	278
Garstang, William	163*
Goodwin, G. S.	400
Graham, J. F.	458
Hammond, G. O.	107, 342
Hawkins, W. P.	458
Hine, Major Charles	630*
Hinman, H. W.	630
Hooker, Fred	278
Horton, B. G.	278
Hull, George A.	572
Hyndman, F. T.	400, 458*
Jackson, H. D.	163
Johann, Jacob (obituary)	682
Jones, L. B.	107
Kellogg, W. L.	51, 278
Ketcham, F. O. (obituary) ..	1519
Krutttschritt, John	681
Ladley, W. E.	52
Langley, J. T.	458
Leary, D. E.	163
Lillie, G. W.	400, 458, 572
MacMillan, D. A.	401
McCarthy, M. J.	107
McCormick, Geo.	163, 222
McKee, G. S.	401
McQuillen, J. E.	515
McRoberts, G. (obituary) ..	459
Mertshheimer, Fred	52
Milner, B.	630
Mitchell, W. N.	401, 458
Montgomery, Hugh	515
Murray, W. S.	345
Nash, Joseph H.	342
Newhall, D. S. (obituary) ..	459
O'Brien, J. E.	631

Personals—General (continued)

Osborne, H. J.	458
Osmer, J. E.	107
Oviatt, H. C.	342
Park, E. A.	278
Payne, B. T.	107
Perry, G. E.	52
Prendergast, A. P.	107
Prendergast, R. Q.	458*
Quayle, Robert	631*
Richardson, L. A.	222
Ridgway, H. W., Denver, Col.	163
Robb, George W.	572
Schmoll, G. A.	515
Schlaefge, Wm.	1409*
Scribner, W. H.	458
Seidel, G. W.	222
Seley, C. A.	278
Small, J. W.	278
Smithan, N. L.	163, 222
Stewart, C. J.	572
Summerskill, T. A.	163
Symons, W. E.	52
Taylor, C. M.	222, 574
Teffteller, O.	278
Thompson, Geo.	401
Tinker, J. H.	107, 401*
Tollerton, W. J.	51
Turner, W. B. (obituary)	574
Underwood, T. F.	278
Van Buskirk, H. C.	107, 515
Warnock, H. R.	631
Waters, J. J.	52, 515
Wildin, G. W.	342

Personals

(Master Mechanics and Road Foremen of Engines.)

Adams, A. B.	515
Akans, E. L.	631
Alling, B. W.	572
Anderson, W. E.	163
Appleton, W. U.	631, 681
Armstrong, A. G.	458
Barker, J. A.	107
Barnes, W. E.	631
Basford, John C.	631
Beardsley, W. F.	273
Bedell, W. A.	342
Benzies, John	107
Bettenberg, N. C.	223
Blake, Henry	163
Borbridge, W.	342
Bowden, J. F.	342
Boyd, Frank	164
Breisch, O. C.	278
Burke, J. M.	342
Burnett, R. W.	1520*
Butler, W. S.	515
Byers, R. F.	681
Castron, H. G.	631
Chase, F. T.	107, 164
Connolly, F.	52
Cope, E. E.	682
Covalt, Frank	164
Crew, A. L.	342
Cross, D. W.	52
Cullom, J. A.	342
Culver, H. W.	223, 459
Cunningham, J. L.	515*
Curley, W. A.	342
Daily, C. B.	459
Daley, J. H.	573
Davis, J. M.	164
Dempster, Gilbert	631
Dewey, Foster	515
Dougherty, J. H.	107
Dyer, W. H.	342
Evans, W. H.	164
Fitzimons, J. E.	164
Flavin, J. T.	631
Ford, J. M.	459
Foster, H. L.	164
Foster, O. M.	164
Fowler, J. E.	515
Franey, M. D.	164
Frauendiener, W. J.	631
French, T. L.	164
Fuller, G. E.	107
Gibbs, J. W.	631, 681*
Greiner, J. R.	278
Grewe, H. F.	342
Griffith, Henry	682
Groening, W. C.	459
Hackett, J. W.	682
Hale, A. E.	632
Hanchett, S. F.	459
Harris, E. J.	223
Hartel, D.	107
Hayes, H. B.	682
Hayman, C. C.	52
Hennesy, T. W.	632
Hodnapp, F.	632
Hoffman, O. A.	107
Hopkins, David	52
Hopper, Frank	278
Huckett, G. O.	401
Hussey, F. A.	278
Hyde, R. C.	164
Ingling, J. E.	279

Personals—Master Mechanics and Road Foremen of Engines—(continued)

English, H. O.	52
Jefferson, Mark	632
Johnson, Frank	632
Judy, Fred	107
Klinitz, G. J.	632
Kothe, C. A.	515
Kuhn, B. F.	164
Lang, J.	279
Leyden, W. T.	459
Love, J. C.	107
McAnany, J. r.	107
McCabe, J.	342, 573
McCarthy, C. A.	632
McCauley, C. C.	52
McDonald, L. J.	279
McGraw, Michael	52
McIlvane, C. L.	515
McKenzie, H. D.	632
McLeod, T. R.	279
Mackenzie, H. D.	681*
Mackery, M. E.	279
Mallison, A.	107
Maxfield, W. E.	52
Moebeck, L. J.	682
Mored, H. S.	632
Moffatt, F. J.	52
Moriarty, G. A.	573, 631*
Mullen, T. E.	682
Nelson, F. W.	343, 573, 632
Novinger, G.	107
O'Connor, N. J.	52
O'Neill, W. J.	632
Patterson, D.	107
Patterson, S. T.	52
Prendergast, R. Q.	164, 223
Ramsey, Ralph	52
Randall, J. B.	52, 164*
Reagan, M. F.	279
Records, J. W.	164
Reid, C. H.	343, 573
Rhodes, J. C.	223
Rhuark, F. W.	343
Ridley, W. J.	343
Roach, J. B.	632
Robb, G. W.	107
Robbins, F. S.	459
Ross, David	516
Ross, W. F.	632
Sealy, William C.	52
Schaefer, Hugo	459
Schraag, C. F.	52
Schultz, E.	52
Scott, M.	107
Sharpe, H. W.	632
Smith, J. L.	52
Stephens, H. H.	459
Stewart, J. B.	52
Stewart, R. L.	223
Stewart, T. R.	343
Stone, G. M.	632
Sweetman, E. M.	632, 681*
Swency, D. R.	632
Tasker, W. S.	343
Tate, K.	632
Tierney, J. R.	107
Trussell, S. G.	52
Underwood, T. S.	223
Vickers, T. M.	343
Wallace, R. E.	52
Watters, J. H.	573*
Whalen, J. M.	343
Wheatley, B. L.	52
Whiteley, G. W.	223
Whitman, Harry	632
Wilkie, Charles	52
Williams, F. W.	459
Wood, R. E.	164
Yeaton, C. S.	52

Personals—Car Department

Acker, Joseph	401
Allison, A. A.	632
Alquist, N. A.	107
Alquist, P.	343*
Bannon, R. J.	223
Beshler, E. L.	573
Buss, Charles	223
Copony, A.	573
Corp, F. C.	682
Cosgrave, P. H.	401
Cousley, W. T.	516
Cupp, J. L.	164
Deane, J.	459
Downing, I. S.	573*
Ellis, W. M.	52
Fleming, I. W.	459
Galarneau, P. D.	164
Hallett, W. J.	343
Hanson, F. H.	343, 401*
Herbster, Albert	682
Hodgson, John L.	573
Hull, G. A.	401
Jackson, J. S.	343
Jay, A. R.	223
Kendall, T. W.	573
Lenzner, Samuel	279
Lewis, Van R.	52
Maddox, C. W.	53

Personals—Car Department—(continued.)

Martin, T.	343
McDonald, A. B.	682
McMullen, John	53
Miller, William	53
Milton, J. H.	459
Osborne, H. N.	343
Otto, John	279
Patterson, W. E.	573
Piggott, S. J.	343
Reed, James	573
Ross, D. C.	279
Rowe, J. C.	164
Schulze, R. W.	573
Senger, J. W.	632
Simpson, C. S.	53
Smart, G. E.	632, 682
Smith, W. K.	632
Stanley, R.	343
Taylor, C. H.	164
Thomas, J. H.	459
Thomson, Geo.	459, 573
Trautman, Adam	53
Watrous, F. C.	632
Weiler, G. S.	573
White, H. J.	343
Wilcox, E. M.	632
Wood, George D.	574

Personals—Shop and Engine House

Acker, J. W.	401
Alexander, J.	53
Amey, M. E.	343, 401
Anderson, J. J.	682
Arbuckle, J. H.	682
Baird, A. M.	682
Baker, C.	223
Bennett, A. E.	53, 223
Beyer, O. S., Jr.	459
Boertman, Chas.	343
Bodine, L. E.	682
Bonesteel, J. C.	401
Booth, Thos.	459
Brooks, C. E.	574
Brumbach, R. F.	223
Bruner, J.	164
Carney, J. A.	401
Chase, M. I.	632
Chenoweth, W. B.	107
Clark, A. W.	53
Clark, F.	223
Clark, J. H.	459
Coe, T. W.	574
Cole, J. C.	632
Colley, C. C.	343
Coniff, P.	343*
Conley, B.	53
Cooke, W. L.	107
Costella, P. I.	164
Crawford, M. L.	223
Crouse, J. L.	344
Cruwell, W. C.	223
Darling, H.	344
Davis, A. F.	164
DeLacey, M. J.	344, 401
Depue, Geo. T.	516
Dibble, Oscar C.	107
Donohue, P. J.	344
Dorr, H. G.	279
Douval, J. C.	108
Drury, C. J.	223
Dufner, J. L.	682
Dumphy, John	107
Earl, W. R.	108
Echle, F. J.	632
Falkens' ein, Coburn	164
Fenstunmaker, L.	223
Fitzsimmons, J. F.	279
Flickwir, J. W.	459
Flinn, R. H.	459
Frændliener, W. J.	574
Frey, C. N.	53
Frye, J. C.	682
Gaffney, T. F.	164
Gilleland, G. W.	108
Giller, C. H.	516
Goodwin, W. E.	516
Gordon, Thomas	223
Graham, Jos.	632
Grant, Hugh	108
Gunter, M. J.	164
Hahn, L. H.	459
Haller, J. I.	279
Hamilton, F. C.	344
Hardesty, F. H.	53
Hartwell, F. S.	279
Hatsel, B. E.	574
Hay, D. W.	574
Henry, C. A.	401
Hilfrink, G.	53
Hitch, C. B.	516
Hitchens, H.	344
Hoff, Geo., Jr.	516
Howard, W. F.	574
Hunt, H. W.	516
Jores, T. P.	459
Jovee, E. P.	632
Keiminger, William	682
Kennedy, E.	53

Personals—Shop and Engine House —(continued)

Kirkpatrick, J.	344*
Knight, T. G.	682
Krueger, A. J.	632
Laking, D. G.	53
Lee, Bernard	682
Lee, S. H.	53
Lee, W. H.	53
Leverage, J. R.	516
Lightfoot, S. S.	516
Linthicum, P.	459
Little, A. H.	108
Logan, S.	459
Lowe, E. G.	165
Mahan, A. H.	574
McArthur, A.	108
McDowell, John	53
McElvy, G. B.	165
McGraw, M. J.	53
McMahon, E. J.	108, 344
McPherson, R.	108
McTavish, A.	402
Meadway, W. F.	53
Miller, John L.	516
Minnick, H. B.	223
Moline, Frank	165
Monroe, A. L.	108
Montgomery, R. H.	223
Moore, J. P.	344
Morton, J. R.	401
Morton, W. O.	165
Mullinix, S. W.	223
Murphy, C.	53
Musgrove, J. H.	279
Myers, H. E.	344*
Nanney, T. H.	53
Newmarch, I. C.	223
Nyer, L. C.	165
O'Leary, M. A.	53
Parker, H. H.	632
Paul, W. J.	344
Peach, J. P.	165
Penketh, S. J.	53
Perry, C.	108
Prewitt, H. A.	516
Rauch, H. S.	108
Ray, J. M.	279
Reich, J. H.	682
Reid, W. G.	223
Renix, W.	108
Rhinehart, C. C.	459
Ridling, R. P.	682
Ringler, D. L.	53
Roberts, A. J.	402, 574
Rosser, H. S.	682
Sargent, M. E.	402
Scanlon, J. C.	632
Schorndorfer, F. S.	402
Scott, W. W.	53
Shaffer, F. E.	459
Shank, C. L.	574
Sheppard, E. S.	108
Shortt, A. T.	223
Stewart, S. C.	402
Studer, F. A.	165
Stull, F. J.	279
Suhl, J.	165
Sullivan, D. J.	279
Trow, W. B.	459
Turton, H. L.	344
Urban, Wm.	108
Van Valin, H. D.	223
Walther, A. G.	108
Warcup, C. W.	223, 279
Whitebread, E. E.	402
Whiteford, I. E.	279
Wilcox, E. M.	516
Williams, E. V.	53
Working, Harry	53
Yeager, W. W.	574

Personals—Purchasing and Storekeeping

Alexander, G. W.	516
Anthony, C. C.	402
Beggs, J. H.	402
Bennett, J. L.	165, 516
Bushnell, F. A.	53, 402
Cain, D. D.	574
Clifford, E. A.	682
Connors, F. E.	682
Cook, H. G.	459
Cooper, W. L.	459
Dailey, E. B.	223
Downing, D. F.	574
Goodchild, A. A.	459
Hall, U. K.	108
Jenkins, G. H.	165
Killian, J. M.	633
Lowe, T. I.	165
McCool, A. F.	223
McWhite, G. E.	516
Mahaney, I. E.	108
Mahl, F. W.	165
Mann, A. C.	516
Marshall, I. F.	459
Mays, F. K.	516
Moodie, D. E.	459
Morris, H. W.	165
Mueller, J. R.	108

Personals—Purchasing and Storekeeping—(continued)

Pearce, H. C.	459
Phelps, W. G.	53
Porcher, Samuel	459
Portlock, W. M.	574
Rice, N. M.	682
Rotureau, B. H.	516
Shoop, W. R.	633
Simpson, R. W.	574
Snyder, J. C.	163
Spratt, Thomas	516
Stokes, W. D.	574
Turner, F. C.	682
Waldron, N. A.	633
Wood, L. B.	108
Woods, R. O.	459
Peterson, Fred. Superheater tools and their care	432
Philadelphia & Reading, car, steel under-bearing	1502*
Philadelphia & Reading, car, steel under-frame box	211*
Philadelphia & Reading, locomotive 2-8-2 type	411*
Philadelphia & Reading, locomotive, inspection, 4-4-2 type	479*
Philadelphia & Reading, manufacture of brake beam hangers	368*
Pickard, F. C., president's address	415
Piece work, paper at Blacksmiths' Convention	490
Pigments, Effect of on constants of linseed oil	188*
Pilcher, John A., Six-wheel truck A. S. M. E.	259
Pipe clamp, Ayers	234*
Pipe threading, stationary die head for, Landis	626*
Pipe union, Mark cold drawn steel	337*
Pit jack, hydraulic, Watson-Stillman	271*, 1265*
Pittsburgh & Lake Erie, gas-electric car	143*
Pittsburgh & Lake Erie, portable rivet forge	33*
Piston rings, Air brake apparatus	132*
Piston rod packing, Metallic	565*
Piston valve bushings, Pressing in, by V. T. Kropidowski	244*
Planer attachment, Radius, Frisco	373*
Planer tool head air lift	537*
Planer (see Machine tools)	
Plating metal by deposition	530†
Platinum, New alloy	582†
Pleiss, Paul, Scrapping boilers with oxy-acetylene	602*
Pneumatic bulldozer	309*
Pollak Steel Co., axles	1366
Pomeroy, L. R., Basis for measuring lathe capacity	133*
Pomeroy, L. R., Curves of locomotive operation	68*
Pomeroy, L. R., Diagram of machine tool operation	248*
Pomeroy, L. R., Power required for punching	372*
Pomeroy, L. R., Tractive effort chart	436*
Pomeroy, L. R., Transmission of electric power	182*
Portable turning machine, Pedrick	569*
Postal car lighting fixtures	218*
Postal car lighting specifications	97
Postal car (see Car)	
Power distribution in Mallets, by Paul Weeks	237*
Power house, Centralia locomotive terminal	357*
Power plant operation, Efficient, by Ernest Cordial	531
Power required for punching	372*
Power Specialty Co., Locomotive superheater	675*
Powers, R. C., Cumberland terminal of the B. & O.	591*
Pratt, E. W., Address at T. E. A. Convention	477
Pratt, E. W., biography	1409*
Press, Hydraulic forging, Chambersburg	339*
Press, small pneumatic, Frisco	376*
Pressed Steel Car Co. Car, Hopper 70-ton Birmingham Southern	503*
Prest-O-Lite Co., welding outfit	220*
Prest-O-Welder, oxy-acetylene	220*
Prices for labor and material, M. C. B.	1459
Pries metal car roof	101*
Propellers, High speed ship	524†
Public regulation, Objectionable	1278§
Pullman cars, New end construction for	504*
Punching machine, Power required	372*
Purchase, E. R., Reclamation of scrap tool steel	432
Purdue locomotive testing plant	171§
Pyle National Electric Headlight Co., headlight	1365*
Pyrene Mfg. Co., Bracket for extinguisher	1524*

Q

Quayle, Robert, Address at Boiler Makers' convention	315
Quayle, Robert, Address at General Foremen's convention	415
Queenan, Wm., Making stock cars from scrapped box cars	379

R

Rack for short lengths of bar, W. & L. E.	76*
Radial stays, Turning and threading, Cent. of Ga.	75*
Rails, Copper in	344†
Railroad construction in the Philippines	165†
Railroad stock and real estate	345†
Railroads and the college man	
520\$, 523\$, 577\$, 580\$, 638\$, 639\$, 640†	
Railway Business Association (see Meetings)	
Railway Club of Pittsburgh (see Meetings)	
Railway difficulties in Argentina	404†
Railway extensions in western Australia	402†

Railway Fuel Association Convention

(Reports and Discussion.)

Boilers, Scaling of locomotive	295
Cars, Self-propelled	324
Coal mine, Construction and operation of a bituminous	293
Coal, Sub-bituminous and lignite	290*
Coaling station, Modern locomotive	294
Contract, Standard form of	289
Election of officers	296
Firing practice	293
Railway Fuel Association (see also Meetings)	
Railway General Foremen's Association (see General Foremen's Association)	
Railway Specifications, paper by O. S. Beyer, Jr., Western Railway Club	50

Railway Storekeepers' Association

(Reports and Discussion.)

Authorized list	304
Effect of specification and testing on storekeepers' stock	299
Effect of stores department on operating cost	301
Election of officers	304
Ice handling	300
Inactive and obsolete stocks	297
Rolling mills at scrap docks	305
Standard casting platforms	313
Standard dry lumber shed	307
Standard oil house	310
Standard supply car	302*
Railway Storekeepers' Association (see also Meetings)	
Railway Supply Manufacturers' Association, Officers and committees	1250*
Railway Supply Manufacturers' Association (see also Meetings)	
Railway Tool Foremen's Convention (see Tool Foremen's Convention)	
Railroad travel, Early	288†
Railway Utility Co., Regulating devices	1526*
Railway Utility Co., Ventilators	1466*
Railways, Value of	44†
Ratio of compound cylinders	227§
Reading (see Philadelphia & Reading)	
Reamer, Expansion, Boston & Maine	595*
Receptacle for waste drinking cups	561*
Recommendations, Careful consideration of Record of locomotive equipment	1425§
Reed-Prentice Co., lathe	527*
Refrigeration, Third International congress of, Proportions of refrigerator cars	613
Refrigerator cars (see Car)	
Reid, J. C., Selection of operators for oxy-acetylene welding	243
Remfry, C. N., Undesired quick action of brakes	317
Repairs, cost of freight car	635§
Reverse gear, Power, Casey-Cavin	627*
Reverse gear, Screw and lever, P. & R.	412*, 481*
Rice, N. M., Effect of stores department on operating cost	301
Riegel grate shaker brackets, D. L. & W.	1391*
Rink, G. W., Steel underframe box cars	657*
Rivet forge, Portable by F. H. Babcock	33*
Rivet heater, Portable, P. R. R.	256*
Riveter, Large Hanna type	274†
Riveter, "Little David"	332*
Riveting machine, Electric, Eveland	394*
Roberts, A. M., Boiler studs and plugs	435
Rock Island Lines, Locomotive as a fire engine	588*
Rocker arm bosses, Tool for turning, M. K. & T.	81*
Rod brass, Improved, by J. E. Osmer	102*
Rod oil and grease cups	366*
Rods, Cost of repairing	29*
Rods, Designing locomotive connecting, 170\$, 175*	
Rods, Main, Foulder design	583*
Rods, Repairs to main, by C. D. Ashmore	29*
Rogers, J. D., Replacing driving spring on Mallet	76
Rolling chairs, Free	1247§
Rolling mills at scrap docks	305
Rommel, C. T., Location of steam gages in setting safety valves	533*
Rosenbaum, E. R., Apparatus for welding with oxygen and illuminating gas	452*
Roth, E. J., Inactive and obsolete stock	297
Roundhouse, B. & O., at Cumberland	591*

Roundhouse, Centralia, Ill. Cent.	353*
Roundhouse facilities, Superior European	185*
Roundhouse foreman needed at night	519§
Rules of interchange	463§
Rules of interchange, Revision of, M. C. B.	1451
Rumsey freight car door	216*
Rumsey mail car door	509*
Russia, Purchase of railways	403†
Rutan, A. N., Tool for repairing triple valve	625*

S

S. K. F. Ball Bearing Company, Bearings for axle light generators	453*
Saddle pin offset, Formula for	647*
Safety appliance models, Norfolk & Western	442*
Safety appliances, Application to cars	147*
Safety appliances in Porto Rico	130†
Safety Car Heating & Lighting Company, Axle generator suspension	456*
Safety Car Heating & Lighting Co., Ball bearings on generators	1466*
Safety Car Heating & Lighting Co., Combined fan and lighting fixture	1420*
Safety Car Heating & Lighting Co., Electric ignition of gas light	1498*
Safety Car Heating & Lighting Co., Fixtures for vestibules	1420*
Safety Car Heating & Lighting Co., Lighting fixtures for Postal cars	218*
Safety on the Chicago & North Western, by W. T. Gale	137*
Safety devices for locomotive boilers	333*
Safety exhibit, Traveling	405§
Safety first	602†
Safety first, Paper at Painters' Convention	543
Safety gates, W. & L. E.	369*
Safety Steel Ladder Co., Box car ladder	220*, 1469*
Safety talks in pay envelopes	513†
Safety valves, Location of steam gages in setting	533*
Safety valves, Securing during tests	1522
Safety valve tester, Frisco	378*
St. Louis & San Francisco, Air hammer for boiler shops	191*
St. Louis & San Francisco, Shop kinks	373*
St. Louis & San Francisco, Steel frame box cars	555*
Sand blast, Portable	86*
Sand, handling on locomotives	172†
Sand, use of, on locomotives, by F. E. Patton	594
Sander, Air for interurban cars	482*
Santa Fe, Apprentice instruction on	311*
Santa Fe, Axle lighting system	392*
Santa Fe, Coupler, engine and tender	274*
Santa Fe, Lathes, milling attachment for	84*
Santa Fe, Locomotive, 2-8-2 type	525*
Santa Fe, Locomotive, 4-6-2 type	525*
Santa Fe, Six-wheel tender truck	526*
Santa Fe, Standard oil house	310
Sauvage air brake safety attachment	1423*
Sauvage air brake valve	1468*
Saw, Boyer pneumatic	509*
Saw, Cut-off, N. & W.	443*
Saw (see also Machine Tools)	
Scaffold for boiler shop	494*
Scale, Device for removing from arch tubes	219*
Scaling of locomotive boilers	295
Scenery, Special baggage car for	615*
Schroeder Lamp Works, Automatic shut-off valve	450*
Schuchardt & Schutte, Corrugated tubes	273
Schulze, R. W., Grain car inspection	33
Schulze, R. W., Improved methods of freight car construction	437*
Schulze, R. W., Instruction in interchange rules	154
Schwartz, R. M., Record of locomotives	527*
Scotland, Ship building in	380†
Scrap docks, Rolling mills at	305
Scrap material, Handling, by B. J. Froehlich	115†
Scrap, Reclaiming iron, cost of	305
Screw reverse gear, P. & R.	412*
Seaboard Air Line Blacksmith Shop kinks	191*
Seaboard Air Line, Trailer truck	74*
Searle, J. M., Practical methods of abating smoke	106
Seat box for locomotive cab	242*
Seat, Convertible for compartment cars	447*
Seat, engineer's in cab	241*
Seats, Steel car	1467
Self-propelled cars, by Dodd & Arnold	324*
Seley, C. A., Address at Boiler Makers' convention	314
Seley, C. A., Roof structure, steel passenger car, A. S. M. E.	258
Sellers, William, & Co., Safety squirt for sprinkling coal	564*
Shackle for driving wheels, Frisco	374*
Shaper for driving boxes	100*
Shaper, Heavy duty back geared, Stockbridge	338*
Shaper (see also Machine Tools)	
Sheafe air hose coupling	332*
Sheafe, J. S., Air brake hose	116‡, 618*

Sheafe, J. S., Effect of specifications on storekeeper's stock	299
Shears, Pneumatic, Frisco	375*
Shed for dry lumber	307*
Sheedy, P., Operation of locomotive drifting device	643*
Sheehan, J. J., Reclamation of scrap tool steel	431
Shield for water glass	227§
Shield for water glass, Delco safety	333*
Shield for water glass, Lake Shore	235*
Shields for locomotive decks, B. & O.	122*
Shoes and wedges, Laying off, by E. T. Spidy	307*
Shoes and wedges, Planing, Cent. of Ga.	537*
Shop arrangements and facilities for cars, by I. S. Downing	144
Shop buildings, Standard gage track through	648
Shop, The finishing	58§
Shop hospital room	84*
Shop improvements at Burnside	193*

Shop Kinks

Air clamp for drill press, M., K. & T.	81*
Air hammer for boiler shops, Frisco	191
Air lift for planer tool head, Cent. of Ga.	537*
Air motors, angle attachment for, B. & O.	22*
Air pump testing stands, Frisco	375*
Air and steam hose, Machine for mounting, M., K. & T.	84*
Angle plates for planing taper flanges	414*
Arch tube pressers, Jig for splitting, Erie	661*
Attachment for countersinking on drill press, B. & O.	22*
Axle lathe output increased, by C. L. Dickert, Cent. of Ga.	34*
Belt record, W. & L. E.	370*
Blacksmith shop appliances, by C. L. Dickert	253*
Boiler shells, Drilling holes in, M., K. & T.	84*
Boiler tube rack, A. C. L.	606*
Boring bar for cylinders, M., K. & T.	82*
Boyer speed recorder testing stand, Erie	661*
Brake cylinder push rods, Welding jaws on	253*
Brake staffs, Upsetting, Cent. of Ga.	538*
Bulldozer, Pneumatic	309*
Carry irons, Bending of	191*
Chuck for drill press, Frisco	374*
Chuck, Pneumatic for staybolt drilling	247*
Chuck for threading studs, B. & M.	595*
Clamps for crosshead, Frisco	377*
Clamps for holding driving boxes, Frisco	373*
Clamps for lifting tires, Frisco	373*
Crane on smoke stack	85*
Coupler yoke, Upsetting and punching	254*
Cut-off saw, N. & W.	443*
Cylinder repaired with concrete, C. & O.	131*
Device for bending S hooks	191*
Device for repairing brake beams	191*
Dies for forming brake rod jaws	253*
Dies for swaging tube ends	142*
Driver for car axle lathe, Cent. of Ga.	34*
Driving box, Brass liners on shoe and wedge fit, B. & O.	75*
Driving box brasses, Table for slotting, M., K. & T.	81*
Driving box cellars, Removing	142*
Driving box, Oil pipe for hub	76*
Eccentric blade benders, B. & M.	306*
Eccentric drilling jig, Frisco	376*
Expansion arbor, B. & M.	595*
Expansion reamer, B. & M.	595*
Gage cock holes, Locating on boiler, B. & O.	21*
Grinding throttle valves, M., K. & T.	81*
Hammer for removing side rod bushings	484*
Heavy expansion arbor, B. & M.	595*
Hoist, Pneumatic for loading cars	85*
Hose connections, Device for pressing in, Erie	661*
Jib crane, ball bearing, W. & L. E.	370*
Jig for drilling crosshead shoes, B. & M.	596*
Lathe chuck crane, Frisco	377*
Lathe dog, Heavy, Frisco	374*
Laying off shoes and wedges, Can. Pac.	307*
Machine, Air bending	254*
Machine for drilling telltale holes	252*
Machine for pressing in piston valve bushings	244*
Machine for turning ball joints, C. & O.	603*
Metal tool cabinet, Frisco	378*
Milling attachment for lathes, Santa Fe	84*
Motion work kinks, Great Northern	136*
Oil burner for heating tires	310*
Packing rings, gang tool for cutting, Cent. of Ga.	75*
Pan for handling material, B. & O.	21*
Pedestal binder hoist, Cent. of Ga.	537*
Pipe bending device	443*
Piston rings of air brake apparatus, Grinding, L. & N.	132*
Planing shoes and wedges, Cent. of Ga.	537*
Pneumatic press, small, Frisco	376*

Shop Kinks—(continued)

Pneumatic shears and cabinet for studs and bolts, Frisco	375*
Rack, Iron for short lengths, W. & L. E.	76*
Radial stays, Turning and threading, Cent. of Ga.	75*
Radius attachment for slotting machines, Frisco	377*
Radius planer attachment, Frisco	373*
Rivet forge, Portable, P. & L. E.	33*
Rivet heater, Portable	256*
Rod bender, flat	136*
Rod bender, round	136*
Rod twister	136*
Safety gates, W. & L. E.	369*
Safety valve tester, Frisco	378*
Sand blast, Portable	86*
Shackle for driving wheel, Frisco	374*
Shoes and wedges, Planing, C. & O.	32*
Slide valve feed valves, Protecting in shipment, C. & N. W.	132*
Spring bands, Machines for pressing off, M., K. & T.	82*
Spring planks, Punching, Cent. of Ga.	131*
Spool for packing, C. & N. W.	596*
Stand for driving wheels, Erie	661*
Staybolts, Testing	142*
Stock feeders for turret lathe, B. & M.	596*
Tire gage, Frisco	378*
Tire heater for locomotive	309*
Tire setting gage, Cent. of Ga.	537*
Tool for turning rocker arm bosses, M., K. & T.	81*
Tumbling shafts, tool for turning, M., K. & T.	83*
Turret tool holder for axle lathe, Cent. of Ga.	34*
Vise for filing crossheads, B. & M.	596*
Wrench for removing lubricator choke plugs, C. & N. W.	371*
Shop men, Safety from accidents, C. & N. W.	137*
Shop operating costs, Decreasing	170§
Shop output, by J. H. Tinker	666
Shop schedules, Paper at General Foremen's convention	423*
Shore, A. F., Locomotive driving wheel	450*
Siemantel, E. L., Milling attachment for lathes, Santa Fe	84*
Side bearings, Anti-friction	158*
Side bearings, Roller, Economy	1530*
Side bearings, Roller, Joliet	1521*
Side frame, Truck, Designing a	383*
Side rod grease plug	568*
Side rods, Grease plug for	396*
Side rods, Oil and grease cups for	366*
Signals, Block in United States	345†
Simplon tunnel, The second	562†
Slack adjuster, Automatic	1521*
Slater locomotive front end	7*
Slotting machine, Radius attachment for, Frisco	377*
Smith, E. C., Planing shoes and wedges, C. & O.	32*
Smith, G. W., Thread cutting dies	434
Smith, Leroy, Portable rivet heater	256*
Smith, Mrs. R. C., Convertible seat	447*
Smith, Thomas, Piston rod packing	565*
Smith, Walter, Organization of engine houses	578§, 597*
Smoke abatement	1370§
Smoke abatement devices, Test of, C. & N. W.	236*
Smoke burning device, C. & N. W.	513*
Smoke consumers, Number in Louisville	46†
Smoke density in Chicago, Test of	478
Smoke, Elimination of black, by Martin Whelan	472
Smoke from engine houses	585†
Smoke Inspectors' Association of Chicago, Report	478
Smoke and mechanical stokers	606†
Smoke, Practical methods of abating, by J. M. Searle	106
Smoke prevention	1377*
Smoke stack, The highest	380†
Society of Testing Materials, Co-operation with	1369§
South African Railways	214†
South Australian railways	123†
Southern Pacific, Standard supply car	303*
Southern Railway of France, Engine house	187*
Space in exhibits	1247§
Spain and France, Railroad to connect	209†
Spain, Railroad connections in	192†
Specialization, Over	496†
Specifications for Chrome-Vanadium tires	16*
Specifications for locomotive frames	1343§
Specifications for postal car lighting	97
Specifications and testing of material, Effect on storekeepers' stock	299
Speed gear, Hydraulic, Waterbury	1527*
Speeders, Gasoline in fire prevention	562†
Spikes, Holding power of	130†
Spidy, E. T., Laying off shoes and wedges	307*
Spool for packing, C. & N. W.	596*
Sprague electric hoist	1400
Spring bands, Machine for pressing off, M., K. & T.	82*
Spring making and repairing, paper at Blacksmiths' convention	488*

Shop Kinks—(continued)

Spring planks, Punching, Cent. of Ga.	131*
Springs, Tests of vanadium	70
Squirt hose, Armored	334*
Squirt hose, Safety, Watertown	449*
Squirt, Safety for sprinkling coal	564*
Stack, concrete at Burnside shops	193*
Standard Car Truck Co., Flat car, P. & R.	1502*
Standard locomotive stoker	621*, 1399*
Standard locomotives, discussion by H. H. Vaughan	11
Standard Steel Castings Co., Small castings	1470*
Standardization of the myriawatt	190
Stark, C. H., Car coupler	101*
Station platform, Changes in England	304†
Staybolt, Flexible	1299*
Staybolts, Drilling telltale holes in, Machine for	252*
Staybolts, Testing	142*
Steam car for navigation	288†
Steam consumption from indicator cards	349§
Steam gages, Location of in setting safety valves	533*
Steam heat traps, Location of	328
Steam hose coupling, Lock for	1398*
Steam meter, Improved, Gen. Elec. Co.	507*
Steel castings, Small	1470*
Steel ends on Frisco box cars	557*
Steel equipment, Paint protection for, paper at Painters' convention	544*
Steel, Heat treatment of case hardened	347§
Steel interior finish for passenger equipment	1525*
Steel passenger car design, A. S. M. E.	257
Steel passenger car (see Car)	
Steel passenger train equipment, Development of	650
Steel, Special alloys and heat-treated for locomotives	1369§, 1347, 1376
Steel tires	1356*
Stevenson, James, Taking up lateral in driving box	74*
Stock cars, Making from scrapped box cars, C. B. & Q.	379
Stockbridge Machine Company, Shaper	338*
Stoker, The Gee locomotive	111§, 155*
Stoker, Hervey	393*
Stoker, Mechanical	606†
Stoker, The Standard locomotive	621*, 1399*
Stoker, Street locomotive	1504
Stokes, W. D., Inactive and obsolete stock	298
Stoilowitz, A., Link side bearing truck	673*
Storehouse, Platforms for castings	313
Storekeepers' Association	284§
Storekeepers' Association, Criticism	406§
Storekeepers' Association (see Railway Storekeepers' Association)	
Storekeepers' stock, Inactive and obsolete	298
Stores department, Effect on operating cost, by N. M. Rice	301
Stucki, A., Car wheel flanges and treads	523†
Stumpf locomotive cylinder	304*
Subjects for Master Mechanics' Association	348§
Subway car, Proposed new for New York	618
Subway for Genoa, Italy	248†
Subway, Traffic on the New York	608†
Sulphur and oxygen in iron and steel	220†
Sulzer-Diesel locomotive	589*
Summers, E. W., Suspension of steel passenger cars, A. S. M. E.	258
Superheated steam, Advantages of, discussion by C. D. Young	15*
Superheater and feed water heater, Lanz	71*
Superheater flues, Tools for applying	27*
Superheater flues, Welding machine for	1302*
Superheater locomotives, Operating, paper at T. E. A. convention	467
Superheater tools and their care, paper at Tool Foremen's convention	432
Superheater tubes, Care of, by T. P. Madden	350†
Superheater tubes, Charcoal iron	1266*
Superheater tubes, Welding of	315
Superheater, Young locomotive	675*
Superheaters, discussion by S. Hoffman, A. S. M. E.	13
Superheaters, Effect of, on life of firebox and flues	315
Superheaters and high water	283§
Supplies that cost nothing	169§
Supply business, Moral awakening in	1403§

Supply Trade Notes.

Allen, C. W.	575
Allison, F. H.	166
American Brake Shoe & Foundry Co.	166
American Locomotive Co.	55, 166, 517
American Vanadium Co.	166
Armstrong, H. T.	54
Ashton Valve Co.	224
Automatic Ventilator Co.	54
Baldwin Locomotive Works	54, 402
Ball, H. F.	55, 224
Bartholomew, W. S.	167*
Basford, G. M.	224*
Beaver, C. W.	55
Beaver Dam Malleable Iron Co.	575
Berry, C. S.	54
Best, Leigh	166

Supply Trade Notes—(continued)

Bordo, L. J., Co.	517, 575
Bower, J. G.	402
Bowser, S. F. & Co., Inc.	402, 460, 575
Bradford, C. C.	634*
Brown, Jos. M. Co.	55
Buckeye Steel Castings Co.	402
Buda Co.	345
Buffalo Brake Beam Co.	54, 224
Burden Sales Co.	109
C. & C. Electric Co.	345
Chadwick, A. B.	54, 166
Chicago Air Brake Co.	633
Chicago Car Heating Co.	109
Chicago-Cleveland Car Roofing Co.	109
Chisholm, J. E.	109
Coffin, C. A.	402
Craigie, J. H.	224
Craven, G. W.	345
Crone, A. E.	54
Curtin, J. M.	280
Davenport Locomotive Works.	54
Davis-Bourbonville Co.	166
Dearborn Chemical Co.	54
Detroit Lubricator Co.	402
Doud, William	280
Easton Car & Construction Co., The.	683
Easton, E. N.	224
Economy Devices Co.	224
Edison Storage Battery Co.	460*
Edison, Thomas A., Inc.	460, 633, 683*
Edwards, O. M. Co.	166
Eggert, C. A.	683
Ennis, J. B.	55
Equipment Improvement Co.	224
Faessler Mfg. Co.	683
Ferro Machine & Foundry Co.	54
Forsyth Bros. Co.	345
Foster, W. H.	225
Fraser, R. C.	224
Fritz, John (obituary).	166*
Froggatt-Morrison & Co.	224
Gardner, Fred	109
General Electric Co.	402, 633
General Pipe, Bending & Erecting Co.	109
Girten, W. F. (obituary).	461
Grigg, F. N.	166
Gower, H. Martin	280
Grip Nut Co.	54, 166
Grip Nut Co.	633*
Hall, W. B.	109
Hawley, W. P.	345*
Hess-Bright Mfg. Co.	54
Higinbotham, J. U.	402
Hoffbine, John	166
Howard, Blake C.	633
Hudson, E. E.	633, 683*
Humphrey, A. L.	167*
Hutchins Car Roofing Co.	54
Industrial Works	224
Jacobs-Shupert U. S. Firebox Co.	109, 224
Jenkinson, W. E.	402, 460
Johns-Manville, H. W. Co.	54
Jones, Chester H.	633
Jungerman, Henry	280
Kerr Turbine Co.	224
Kirkpatrick, J. B.	633
Lavelle, H. E.	54
Lepreau, F. J.	460
Lewis, B. J. (obituary).	634
Littlefield, Fry & McGough.	166
Lima Locomotive Corporation.	402
Lindstrom, C. A.	280
Locomotive Brick Arch Co.	402
Locomotive Stoker Co.	167*
Lowman, Harry	109
Lucas, Abram	224
M-C-B Co.	345
McCormick, C. H.	575
McIntosh & Seymour Corp.	683
Manning, Maxwell & Moore, Inc.	575
Mazzur, F. A.	224
Meeker Grip Nut Co.	224
Mesker, L. H.	54
Mid-Western Car Supply Co.	517
Miller, Wm.	55
Monarch Pneumatic Tool Co.	55
Moore, A. C.	402
Morrison, C. J.	224
Mudge, Burton W. & Co.	224
Mundy, Arthur F.	402
National Malleable Castings Co. (obituary)	517*
Nicholson, J. L.	402
Noble, L. C. (obituary).	517*
Oil Power Engineering Corporation.	54
Olmstead, C. J.	166*
Oxweld Acetylene Co.	54
Passmore, H. E.	633*
Payne, Nathan B.	166
Peabody, G. Haven.	402
Pearsall, G. H.	109
Pedrick Tool & Machine Co.	224
Perry, H. M.	166
Pittsburgh Spring & Steel Co. (obituary)	517*
Pittsburgh Spring & Steel Co.	575
Pope, A. A. (obituary).	517*
Pressed Steel Car Co.	109, 280
Proctor & Gamble Co.	166
Pullman Co.	55
Putnam Machine Co.	575

Supply Trade Notes—(continued)

Pyle-National Electric Headlight Co.	55
Quigley Furnace Co., The.	683
Railway Utility Co.	683
Ralston Steel Car Co.	575
Reading-Bayonne Steel Castings Co.	575
Replogle, C. N.	575
Rice, E. W., Jr.	402*
Rider, J. B.	109
Robbins, Chas.	280
Rose, W. G.	166
Rosenthal, A. E.	280
Rosenthal, G. D.	345
Ross, Mark A.	345
Ryan, M. F.	575
Ryerson, Jos. T. & Son.	109, 224*
Safety Car Heating & Lighting Co.	402
Safety Car Heating & Lighting Co.	575*
Sargent, G. M.	109*
Slocum, E. F.	575*
Standard Asphalt & Rubber Co.	166
Standard Heat & Ventilation Co.	109, 166, 517, 575
Star Brass Mfg. Co.	402
Stark, J. L.	109
Steele, W. P.	55
Stetson, A. B.	683
Stoy, G. E.	345
Strauss, H. A. Co.	402
Street, C. F.	54, 167*
Swan, J. J.	54
Tate-Jones & Co., Inc.	280
Taylor, E. C.	54
Thompson, A.	280
Thompson, H. G.	460*
Thornburgh, Wm. N.	166
Titanium Alloy Mfg. Co.	280
Turner, G. S.	575
Underwood, H. B. & Co.	224
Union Railway Equipment Co.	109
United States Light & Heating Co.	345*
Universal Flexible Packing Co.	109
Van Dorn & Dutton Co., The.	55
Van Nest Co.	54
Vandaveer Clay Products Co.	345
Waugh Draft Gear Co.	345
Weaver, C. R.	517
Westcott, C. R.	345
Westinghouse Air Brake Co.	166*
Westinghouse Elec. & Mfg. Co.	280
Whipple, A. L.	517
Whyte, F. M.	54
Williams, A. R., Mach. Co.	280
Winslow, Horace L.	683
Wood, M. F.	54
Woods, Edwin S. & Co.	166
Woods, E. S. (obituary).	683*
Wyckoff, A. D.	575
Yale & Towne Mfg. Co.	55
Swenson Valve Company, Boiler check.	456*

T

Tables for designing car center sills.	444*
Tables of locomotive dimensions.	18
Tank car design.	445*
Tank and strainer valve, Franklin.	1367*
Tank, Waste soaking, Bowser.	1500*
Tank well and valve, D. L. & W.	513*
Tasmanian railways.	154†
Temperature regulating devices, Utility.	1526*
Tender truck, Equalized swing motion.	397*
Tender truck, Six-wheel, Santa Fe.	519‡
Tender, Vestibuled, Can. Pac.	120*
Terry Steam Turbine Co., Train lighting set	676*
Test of brake shoes.	1425‡
Test with superheated steam.	1370‡
Test, Turning truck wheel tire.	466‡
Test of Vanadium cast steel frames.	397*
Testing locomotive springs, Machine for, P. R. R.	159*
Testing machine, Tension 1,000,000 lbs. capacity, P. R. R.	159*
Testing plant, The Purdue locomotive.	171‡, 1344‡, 1350
Tests of alcohol heater car.	441*
Tests of boring machine.	99*
Tests, Horizontal milling machine.	48
Tests of Jacobs-Shupert boiler.	63*
Tests of paints.	188*
Tests of passenger car lighting.	607
Tests of spring steel.	70
Tests of superheated locomotives.	1384*
Tests, Plant for testing cars.	1‡
Tests, postal car lighting.	212*
Texas State Railroad.	316†
Thalheimer, Nicholas C., Device for securing hand holds.	103*
Thomson Pneumatic Tool Co., Drill clamps	103*
Throttle lever rigging, Improved.	331*
Throttle valve, grinding, M. K. & T.	81*
Tinker, J. H., Shop output.	666
Timber, Seasoning by electricity.	624†
Time study of repairing driving boxes.	202*
Tire gage, Frisco.	378*
Tire heater, Hauck.	628*
Tire heater, Gasolene.	309*
Tires, Turning driving wheel.	173‡
Tires, Turning driving wheel, E. A. Murray	640‡

Tire turning record.	62‡
Tire turning, Record for, C. & O.	336*
Tires, Clamp for lifting, Frisco.	373*
Tires, Tests of Chrome-Vanadium.	15*
Todd, John, Shop kinks.	661*
Tool cabinet, Metal, Frisco.	378*
Tool for finishing ball joints of superheater units.	1401*

Tool Foremen's Convention.

(Reports and Discussions.)

Dies for forging machines.	434
Form of thread and degree of taper for studs and plugs.	435
Making thread cutting dies.	433
Pratt, E. W., address.	431
Superheater tools and their care.	432
Tool steel, scrap, Reclamation of.	431
Tool for repairing triple valves.	625*
Tool post, Turret for axle lathe.	34*
Tools and formers, paper at Blacksmiths' convention.	486
Tools for application of boiler tubes.	23*
Tools for the blacksmith shop.	191*
Tools, Special wrecking, C. B. & O.	147*
Torque, Basis for measuring lathe capacity.	133*
Tracing files, Duplex spring clips for.	271*
Tractive effort chart, by L. R. Pomeroy.	436*
Tractive effort, Maximum, Speeds to be obtained.	68*
Trailer truck, New design of Hodges.	74*
Train wrecks, Equipment for clearing.	145*
Trains, Late, New York Central.	154†
Transandine Railway.	165†
Transformers, Electric explained.	184
Traveling Engineers' convention, comments.	464‡

Traveling Engineers' Convention.

(Reports and Discussions.)

Address by F. F. Gaines.	474
Address by D. R. MacBain.	476
Address by W. L. Park.	477
Address by E. W. Pratt.	477
Address of President.	467
Advantages of the brick arch.	473
Care of locomotive brake equipment.	477
Election of officers.	478
Elimination of black smoke from locomotives.	472
Operating department and fuel economy.	469
Operating superheater locomotives.	467
Traveling Engineers' Association (see Meetings).	
Trespassers, Penalties for.	390†
Trespassers in Texas.	53†
Triple valve lubrication.	1403‡
Triumph Electric Co., Reversing motor planer drive.	269*
Truck, Arch bar.	1505‡
Truck bolster, Designing a.	381*
Truck, Electric, Elwell-Parker.	1497*
Truck equalizer design.	408‡
Truck equalizer design by L. V. Curran.	96*
Truck equalizer design, by Sigurd Holm.	350‡
Truck for 70-ton car.	1503*
Truck locking device.	104*
Truck side frame, Designing a.	383*
Truck, Tender, Six wheel.	519‡
Truck, Tender, Equalized swing motion.	397*
Truck wheel tire turning test.	466‡
Truck transoms for passenger coaches, Manufacturing.	487*
Trucks, Car, Six wheel, N. & W.	38*
Trucks, Electric, Self-propelling.	1497*
Tube ends, Dies for swaging.	142*
Tube, Improved type of corrugated.	273
Tubes, Limit of length, without midway support.	314
Tubes, Welding superheater.	315
Tuma, F., Compound locomotive air pump.	104*
Tumbling shafts, Tool for turning, M. K. & T.	83*
Turbine, Steam, advantages of.	242†
Turbines, Latest marine.	650†
Turntable tractor.	448*
Turret lathe, Stock feeders for, B. & M.	596*
Twister for rods, G. N.	136*

U

Underframe for steel gondola, designing a.	384*
Underframe, Steel passenger car, John McE. Ames, A. S. M. E.	261
Union Pacific, Moving pictures in educational work.	67
Union Pacific refrigerator car.	263*
Union Pacific & Southern Pacific standard locomotives.	5*
Union Pacific, Standard locomotives.	1‡
Union Railway Equipment Co., Metal car roof.	101*
Union Steel Castings Co., Test of locomotive frames.	397*
U. S. Metal & Mfg. Co., Collapsible stake pocket.	678*

U. S. Metal & Manufacturing Co., The Kling
bolt 158*
United States air brake 508*
Unloading machines, Damage to cars 1507*
Uruguay, New port railway in 456†

V

Valve, Automatic shut-off 450*
Valve, blower 160*
Valve, Brass gate, Jenkins 1501*
Valve gears, Improving 169‡
Valve gear, Locomotive, driven from cross-head 215*
Valve setting and cylinder ratios in Mal-lets 237*
Valve, Tank and strainer 1367*
Valves, Size of reducing 643†
Van Dorn, W. T. Co., Pressed steel ends 1499
Van Dyken, H., Detector for fractured crank pins 512*
Vanadium cast steel frames, Drop test of 397*
Vanadium production 132†
Vanadium spring steel, Tests of 70
Vanadium steel car wheels 181
Vanadium steel driving axles and frames, Service of 1254
Vanadium steel locomotive parts, Service of Vaughan, H. H., Discussion of common standard locomotives 11
Vaughan, H. H., General problem, Steel passenger cars, A. S. M. E. 257
Vehicles, Dead weight of 84†
Ventilator, Locomotive cab window 676*
Ventilators, Utility 1466*
Vestibule, Collapsible for steel cars 87*
Vestibule locomotive cab 117*
Victoria, Passenger alarms in 352†
Victorian railways, Rolling stock on 32†
Virginian Railway, Replacing a driver spring on a Mallet 76
Vise, Quick acting lever 674*
Vixen Tool Co., File sharpener 396*

W

Wabash Railroad, 60 foot steel postal car 609*
Wallace, L. W., designing a steel gondola car 381*
Wallace, L. W., Study of car wheel flanges and treads 497*
Waste retainer for journal boxes 510*
Water cooler for postal cars 1498
Water coolers, Sterilizing 1500

Water gage, Babcock safety 333*
Water gage, Improved Klinger type 1299*
Water gage, Safety cut-out valve for 1266*
Water glass shield 227‡
Water glass shield, Delco safety 333*
Water glass shield, Lake Shore 235*
Water joint, Franklin 1400*
Water on trains, Pure drinking 53†, 165‡
Water tube fireboxes 113‡
Water tube firebox, Service of Brotan 128*
Water unaccounted for 153†
Waterbury Tool Co., Hydraulic speed gear 1527*
Watertown Specialty Company, Cylinder cock 101*
Watertown Specialty Company, Safety Squirt Hose 449*
Watson-Stillman, Hydro-pneumatic accumulators 48*, 1421*
Watson-Stillman Co., Pit jack 271*, 1265*
Watson-Stillman Co., Shear and riveter for coupler yoke 1525*
Weeks, Paul, Distribution of power in Mal-lets 237*
Weir & Craig Manufacturing Company, Turntable tractor 448*
Welding, Oxy-acetylene and electric 315
Welds, Making with the electric arc 391*
Welfley, L. P., Side rod grease plug 568*
Welin Marine Equipment Company, Compensating quadrant crane 455*
Wells, Fargo & Company, Express refrigerator cars 149*
West Disinfecting Co., Sterilizing water coolers 1500
Westbrook, M. H., Guide bar blocks 115‡
Western Canada Railway Club (see Meetings).
Western Railway Club, Paper on shop out-put 666
Western Railway Club (see Meetings).
Westinghouse Electric & Manufacturing Co., Motor for shop service 159*
Westinghouse Electric & Manufacturing Co., Single-phase motor 1521
Westinghouse Electric & Manufacturing Co., Universal blow torch 453*
Westlake, C. T., Cast-steel double body bol-sters, A. S. M. E. 260
Westley, Isaiah S., Manufacture of brake beam hangers 367*
Wheel flanges and treads, Car 523‡
Wheel flanges and treads, Study of, by L. W. Wallace 497*
Wheel lathe, New model 336*
Wheel and rail, Relation of 1426‡
Wheels, Cast iron for 70 tons capacity 1369‡
Wheels, Chrome-Vanadium steel 181
Wheels, Locating defective on cars 152*

Wheels, Unloading car 390*
Wheeling & Lake Erie, Iron rack for short lengths 76*
Wheeling & Lake Erie, Locomotive, 2-8-0 type 641*
Wheeling & Lake Erie, Shop kinks 369*
Whelan, Martin, Elimination of black smoke 472
Wiener Machinery Co., Quadruple combina-tion machine 452*
Wilson, H. C., Boiler studs and plugs 435
Wilmarth & Morman Co., Surface grinding machine 1267*
Window weather stripping, Universal 1501*
Winter, Preparing for 636‡
Winterrowd, W. H., 4-6-2 type locomotive 117*
Wireless, Long distance 204†
Wireless, Stopping trains by 606†
Wiring diagram for electric headlight, 367*, 429*, 546*, 603*
Wolfe, Ralph, Care and maintenance of air brakes 265
Wolfgang, W. H., Iron rack for short lengths 76*
Wolfgang, W. H., Shop kinks 369*
Wood, Arthur J., Railroads and the college man 638†
Wood, Edwin S. & Co., Anti-friction side bearings 158*
Woven Steel Hose & Rubber Company, Arm-ored squirt hose 334*
Wreck, Equipment for clearing 145*
Wreck statistics 574†
Wreck, Steel passenger cars in a 561*
Wrench, Compression 1503*
Wrench, Non-binding, Barcalo 1467
Wrench for removing lubricator choke plugs, C. & N. W. 371*
Wrist Pins, Turning four-bar crosshead 192*, 582†
Wymer, C. J., Developing efficient car in-spectors 380

Y

Young, C. D., Discussion of advantages of superheated steam 15*
Young, C. D., Locomotive superheater 675*
Young, C. D., Painting steel passenger cars.
Young, O. W., Formula for saddle pin off-set 647*, 245*, 259

Z

Zinc production 378†

Page numbers under 1,000 refer to *Railway Age Gazette, Mechanical Edition*; those over 1,000 refer to the *Daily Railway Age Gazette*. * Illustrated article; ‡ editorial; † short non-illustrated article or note; ‡ communication.